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summaries and reprints
of current materials on
economic and social
development

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DEVELOPMENT DIGEST

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Poor health is a major impediment to efficient work and to innovation in low-income countries. For these and for basic humanitarian reasons, health is a major claimant for the national resources which the planner must attempt to allocate.

The authors in this section are painfully aware of the inadequacy, by humanitarian standards, of resources that can be devoted to health. They are anxious to find ways to maximize the health of the whole society with the resources available. John KAREFA-SMART surveys the connections between health and development, the need to stress preventive over curative medicine, and to extend medical services to serve a greater portion of the population. E. R. RADO argues that medical services must not be considered ends in themselves but only means to the people's health. He suggests how doctors can be more effective where they are too few. These concerns are reflected also in an important new book reviewed at the end of the section.

HEALTH AND WELFARE SERVICES IN DEVELOPMENT PLANNING

John Karefa-Smart

[From Africa, Progress Through Cooperation, John Karefa-Smart (ed.), New York, Dodd, Mead and Company, 1966, US$ 2.25, pp. 163-170. The papers in this volume were prepared for the African Conference on Progress Through Cooperation, held in Kampala (Uganda), 9-15 May 1965, sponsored by the Council on World Tensions and Makerere University College.]

These are excerpts from the paper.

Nearly all developing countries pay a severe penalty for the lack of adequate health and welfare services, in terms not only of very high death rates, but also of reduced capacity for a full output of work, low rates of production, diminished energy, and a general lowering of the body's power to fight against illness and disease. Accurate statistics are not available, but it is generally accepted that more than half of all the children born die before reaching the age of five.

It would be useful if a means were available to give an economic value to this tragic loss of human life and to the later effects of continuing ill-health on the surviving adults. But economists have not yet agreed on the financial value of a human life, nor do we have a reliable estimate of the average cash value of the work of a healthy adult human being for one hour.

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The definition of health adopted by the World Health Organization is "Not merely the absence of disease or infirmity, but a state of complete physical, mental, and social well-being." Accepting this definition, we naturally include in planning for health all those educational and cultural facilities which contribute to maximum welfare of the human body and mind.

Health Factors and Other Development Factors

In order to persuade development planners to give sufficiently high priority to the provision of health and welfare services, it is useful to examine how the important factors involved in poor health are related to other factors that hinder development.

Disease. Foremost is the high incidence of disease, with the consequent high mortality rate. To relieve the suffering caused by illness and to restore ill people as soon as possible to a state of health which will enable them to play their part in production, medical services in the form of clinics, health centers, hospitals, and sanitaria are required, and an adequate number of doctors, nurses, and laboratory workers to man these facilities. Both the physical facilities, in the form of buildings, and the training of the medical and para-medical staffs cost money which has to be provided from the common pool of the national income, for which there are many competing claims.

But the high incidence of disease in developing countries is also due to lack of sanitation, the presence of insects and other forms of animal life (e.g., mosquitoes and snails) which carry and transmit disease, poor facilities for the disposal of human and other forms of waste through which parasitic diseases and infections are spread, and the polluted drinking water. The correction of these deficiencies in the environment is costly and requires trained sanitarians and engineers.

Nutrition. The low nutritional status of the majority of the population contributes -- together with infections and parasitic diseases -- not only to the death of half the children during their early years but also to much ill-health among adults. Conditions such as intense protein malnutrition (kwashiorkor) in childhood may lead to chronic debility throughout life. In addition, there are various diseases due to deficiencies in specific vitamins (e.g., beriberi) or in elements like iodine (e.g., goiter). Even where there is no specific illness, diets below the accepted optimal standards in both quantity and quality lower resistance to disease and lead to lethargy, laziness, and inefficiency.

Those responsible for development planning must decide what importance is to be given to providing better nutrition. But, any

combination of methods chosen depends on other development programs for success. For example, the cost of food depends not only on production methods, but also on related costs of distribution.

Agricultural inefficiency. A further factor contributing to slow progress in development is that too many people are occupied in food production. In a highly developed country like the United States, approximately 15 percent of available labor is engaged in food production, yet more than enough for natural consumption is produced, with huge surpluses. In developing countries, the percentage may be as high as 90 in some cases. Successful planning for economic development, therefore, depends on the release of a large number of persons at present engaged only in agriculture, so that they can be employed in other sectors of the economy. This is possible only if agricultural production is made more efficient or if arrangements are made to obtain food from outside sources.

Other factors. Another major hindrance is the lack of adequate educational facilities. Percentages of illiteracy, which are often higher than 60, together with the very low standard of achievement of the majority of those who do go to school, characterize most developing countries. The lack of educational facilities and of teachers is a serious handicap to efforts to spread knowledge of the basic principles of personal cleanliness and nutrition, and of public sanitation, which is necessary if the general level of public health is to be raised.

Contributory economic determinants include low per capita income, low levels of industrial production, and poor facilities for transportation and communication. Poor communication is a handicap in much the same way as poor education becuase it severely restricts the flow of ideas from the leaders to the masses, and vice versa.

Priorities in Planning for Health

The main objectives of planning for better health should be: to reduce the high incidence of disease; to achieve an improved nutritional status for the whole population; and to make available to all people a knowledge of the basic elements of sound health.

Hospitals. Very often hospitals are given the highest priority. Apart, however, from the humanitarian motive of bringing relief to those who suffer and, in the case of infectious diseases, the prevention of contagion, the claims of hospitals for such high priority should be re-examined. It is doubtful whether the provision of more hospital beds has any significant effect on the residual pool of illness in the community.

To begin with, a high standard in the practice of modern medicine and surgery in hospitals depends on the availability of well-trained physicians, surgeons, medical specialists and nurses, laboratory workers, and other paramedical personnel. The colonial-type, one-doctor hospital, with major emphasis on curative medicine for a privileged few while the sources of disease are not being attacked, may have political justification for the money spent on it, but little justification in the economics of public health.

Further, until the time comes when the resources of the country can provide enough schools to produce enough potential medical students, while meeting the needs of the other services, there will not be enough national doctors and other medical personnel to staff adequately a significant number of hospitals. Sufficient consideration should, moreover, be given to the enormous capital requirements and recurrent expenses in establishing and running a national medical school before a decision is taken to establish one.

Preventive medicine. More rapid and substantial gains can be achieved by placing greater emphasis on control of the sources of the major diseases. The medical profession has enough knowledge of the causes of these diseases, the means of their transmission, and the methods of controlling them, that, given a basic organization of health services covering the entire population, campaigns could be mounted for mass treatment or for mass inoculation or vacinnation. Such campaigns would not only control the diseases, but in some cases even eradicate them.

This is a matter in which an ounce of prevention is worth a pound of cure. The level of training necessary for efficient workers in such mass campaigns does not involve more than a basic understanding of certain principles and procedures; it can be reached after a few months of instruction, as compared with the seven or more years needed for full medical training. It is therefore important to give high priority in health planning to the organization of community-oriented preventive centers at the village, clan, district, regional, and national levels. Such curative services can also be given in these centers as is consistent with their major functions of prevention and control of communicable diseases and epidemics.

Sanitation. The role of environmental sanitation in the reduction of disease is of the greatest importance. Wherever pure drinking water has been made available to everyone in the community, and safe and sanitary methods employed for the disposal of human and animal wastes and refuse, a marked drop in the incidence of infections and parasitic diseases has followed. Usually these services are the result of a general rise in the standard of living of the

population, following increases in per capita income and in productivity, rather than the direct result of planning for health. However, it is generally accepted that it is the responsibility of the health authorities to set and maintain the standards of sanitation.

Housing. Similarly, the provision of adequate housing, by lessening overcrowding with its possibilities for the rapid spread of disease, has often been accompanied by lower incidence of illness. Again, while medical and health authorities do not have the principal responsibility for providing adequate housing, they often share responsibility in setting acceptable standards.

Nutrition. The improvement of nutrition calls for close cooperation among the authorities responsible for agricultural production, internal and international commerce, and education. Health workers can identify the specific problems of malnutrition and can prescribe the remedies for actual clinical cases under their care. But, only nationally integrated programs involving the provision of adequate quantities of food of the right quality, at a cost not beyond the means of any families, can bring about a change in the nutritional status of the whole population.

Cooperating to communicate knowledge. Finally, there is the objective of imparting useful knowledge about all aspects of health to the entire community, which again calls for interdepartmental and interprogram cooperation. The Department of Education, through its schools and colleges, has a major responsibility to provide instruction in health, as in other subjects. The agency responsible for adult and mass education should include health facts and ideas in all its programs.

Those responsible for planning for national health have an obligation to cooperate fully with other nations, especially in the control of communicable disease, in order to promote and protect the health of their own and of all peoples.

COST-BENEFIT ANALYSIS IN HEALTH

E. R. Rado

[From "Cost-Benefit Analysis, Education and Health: Some Preliminary Notes," Cost-Benefit Analysis of Social Projects: Report of a Meeting of Experts Held in Rennes, France, 27 September-2 October 1965, Geneva, United Nations Research Institute for Social Development, 1966, no charge, pp. 121-129.]

[The UN Research Institute for Social Development was founded in 1964 "to conduct research into problems and policies of social development and relationships between different types of social development and economic development during different phases of economic growth." The report of the Rennes meeting, which attempted to assess our knowledge of cost-benefit analysis of social projects, is the Institute's seventh published report. Most data presented were from high-income countries.]

These are excerpts from the paper.

In countries where publicly financed social expenditures are high and rising in relation to national income, yet pitifully inadequate by any absolute standards, the introduction and use of rational and workable criteria to guide the disposal of limited resources in these fields assumes an importance of the first order. How suitable are the techniques of cost-benefit analysis to the analysis of problems of this kind? This paper will consider social expenditures in health.

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Full-fledged analysis would require the identification, measurement, and valuation of both the benefits and the costs, direct and indirect, private and social, of proposed alternative lines of action, and their comparison by agreed mathematical techniques. Such exercises are fraught with difficulties which are both practical and philosophical. In the health field, they are magnified by two factors:

1) the difficulty, both practical and philosophical, of attaching numerical monetary values to benefits which are not normally provided by the maket mechanism and which are probably irrationally priced even when they are sold for cash;

2) the objection of the medical profession to a procedure which logically demotes to the rank of means activities which they consider as ends in themselves.

To the extent that an activity is classed as an end in itself, its value cannot be objectively compared to that of another activity which is also classed as an end unless there is a socially agreed rank-ordering of ends. If, for instance, both primary and secondary education are regarded as ends in themselves, there is no way of rationally choosing between primary education for A, B, and C versus primary and secondary education for A only. Only the introduction of an additional criterion external to the activity which is being evaluated (e.g., education is a means of solving a given manpower shortage) enables us even to think of a rational evaluation of different types of education or of health services.

Economic Choices in the Social Field

It is difficult to overestimate the degree of suspicion with which the medical profession views any line of approach which carries the implication that its activities are means to a (possibly material) end. Human beings should not be cured for the economic benefit this will confer on them or on society, it is argued. There is a natural -- and laudable -- "absolutism" in the basic philosophy of the profession, which holds that the only legitimate aim of the medical profession is that all persons should live in the best of physical and mental health for as long as possible. Alas for absolute aims: in much of Africa today, half of all live-born children die before the age of one and may even go through life without ever seeing a doctor.

It is not the ultimate aim that economists wish to question, but the path towards it. Since health is now only partially available to those who could make use of it, choices are already being made as to who should be treated (and who not), and by what methods.

Surely, it would seem, the rationale of these choices is a legitimate field of inquiry for those outside the professions concerned. How fast we should progress towards the eradication of malaria is not a question which the medical profession is competent to answer on medical grounds alone. The economist's contribution to this discussion lies in the direction of pointing towards rational choices among feasible alternative means towards some given end. The more numerous are the noncomparable ends, the more limited is the field within which rational choice can be exercised.

The institutional framework within which health policy is formulated in most countries today results in the elevation of the means of health policy to the rank of ends. Thus, health targets are formulated in terms of the number of doctors and hospital beds "required" per thousand of population. It is hardly necessary to argue that a procedure which measures production in terms of inputs rather than outputs (and which implies that progress is proportional to the volume of inputs used) has a built-in bias towards the inefficient use of resources. The principal practical task of economists working in these areas is to undermine the notion that there is anything sacrosanct about the means by which health policies are carried out, as opposed to the ends they are meant to serve. They must persuade the professions concerned to formulate the (hopefully measurable!) ends which they really seek.

Two Progressive Steps

Practical progress may, therefore, be expected in two stages. The first stage might be described as one in which health targets are formulated in terms of output rather than the traditional input-concepts, e.g., defined levels of health-status rather than doctor-patient ratios. The economist would then be free to seek (with appropriate technical assistance from the professions concerned) optimum paths to the defined ends. This method would restrict us to comparing the alternative costs of equal benefits. It precludes the comparison of costs and benefits, for, by definition, the benefits are not quantifiable, at least not in the same units as the costs. It will also permit the comparison of the alternative benefits of equal cost projects. But, here the range over which comparisons can be made will depend on the degree of generality of the output concepts (e.g., we can only compare the "values" of anti-malaria and anti-tuberculosis campaigns if we can evaluate both in terms of, say, their impact on life-expectancy). Thus the chief methodological problems one foresees in this approach will arise from the attempt to define units or indices of output; the principal practical problems will be caused by our lack of knowledge of the production functions in health.

For all its restrictiveness, such a procedure, if successfully adopted, would represent a significant advance over present procedures and practices in most countries (particularly those in the underdeveloped world), and should not be lightly dismissed.

The second stage -- theoretically perhaps preferable, but certainly less practicable -- would be to argue that health is not an end in itself, but a means to some other, still higher, end. This end one can define with various degrees of sophistication as some "level of welfare," or more crudely and simply, as some level of gross national product per head.

The theoretical advantages of this method are enormous. Using a monetary yardstick, it would enable us to compare marginal benefits with marginal costs and, even if we were forced to seek refuge in an abstract (but feasible) index of welfare, it would enable us to make comparisons between the benefits of various health programmes, which the first method rules out.

Alas for theory: this approach is open to damaging criticism. It might be held to treat men as means rather than ends. Should doctors, for instance, decide on priority of treatment according to the presumed marginal social product of their patients? (Interestingly enough, we seem to be less worried that priority in education is usually awarded on the basis of presumed cleverness, at all levels in poor countries, at the higher levels in richer ones -- though the parallel with health is strikingly close.) And even if we disavow the crude, monetary measure of benefits, can we ever hope to construct a social welfare function which would enable us to say whether a man -- or the society in which he lives -- would gain more from the eradication of his malaria than of his illiteracy? Admittedly, when resources are scarce, decisions will be taken at some level that will imply which of these disabilities will be treated (or treated first), but I see little prospect of their being taken on "scientific" grounds. We know too little about the productivity or welfare-consequences of health measures to have any serious hope of making meaningful quantitative comparisons between them, even if we stopped worrying about the theoretical validity of what we are trying to do.

Manpower and Rate-of-Return Approaches

This is not to say that some progress in this direction might not be made. Already, in the field of education, targets are being drawn up with reference to the presumed future manpower needs of society. These educational plans imply, to a greater or lesser degree, that educational needs can be assessed by criteria which are external to education. Nevertheless, the manpower-planning

approach is a far cry from cost-benefit analysis, for it makes no attempt to compare presumed benefits and probable costs. Indeed, it is probably typical of this approach that some of the best-known manpower-education plans were completed and submitted with barely even an attempt to estimate their costs! I see scope for considerable technical progress in the "art" of manpower planning, not in the direction of assigning monetary or index-values to the presumed benefits of education, but in the direction of seeking least-cost paths to the agreed manpower goals. This is no mean goal when one considers how little critical, scientific work has been done on the economics of education, or health.

I have equally little hope for practical, applicable results from rates-of-return calculations as applied to education or health. Even if one accepts the legitimacy of the questions they are trying to answer -- which is very much open to debate -- and even if they succeed in comparing marginal benefits with marginal costs, they can only tell us the desirable directions of change but not its magnitude. As plans are meaningless without magnitudes, one is willy-nilly forced back to the manpower-planning approach, for all its admitted imperfections.

Prospects for Planning Health Expenditures

Just as in the field of education, manpower planning represents a limited but genuine step forward on planning education solely with reference to an educational aim, limited progress of a related kind is possible within the field of health. However, since health is a more emotional subject, progress is also likely to be more limited. Suppose, for instance, that the medical profession accepted the maximisation of life-expectation at birth as their proper goal. Now many, if not most, underdeveloped countries have both an undesirably high rate of population growth (relative to their factor-endowments), and high rates of infant mortality. Without doubt, the easiest and quickest way of lengthening life-expectation at birth would be to reduce infant-mortality. Yet the economic effect of this would be accelerated population growth and no -- or even a negative -- productivity impact. Would it not be wiser, though undoubtedly less humane, to accord first priority to measures which maximise life expectation at the age of, say, 18? Or, to take another example, when planners consider which of several endemic diseases to eradicate first (e.g., malaria, yaws, worms, bilharzia), would it not make sense to rank them in order of their experimentally demonstrated debilitating effects, and to consider priorities in that light?

The preceding pages have indicated my pessimism about the scope for formulating operational welfare functions which could assist us in directing "social" expenditures into the most productive

channels. The alternative I advocated was that of seeking minimum-cost solutions to given benefit projects or programmes. Though less ambitious, this approach still has plenty of problems of its own. The biggest of these, conceptually, is the definition and measurement of benefits in noncontroversial units.

An Example from East Africa

Perhaps it is best to lead into this discussion by an example. It has been shown, in a most illuminating recent study by Dr. M. King and R. Jolly of the economics of a Ugandan rural hospital [see review, pp. 15-17], that the principal determinant of the frequency of outpatient attendance at a hospital is the distance a patient lives from the hospital. The average number of outpatient attendances per person per year halved itself every 2 miles for a hospital, every 1.5 miles for a dispensary, and every mile for an aid-post. Thus, patients living in outlying areas had a far less than proportionate share of tax-financed medical services. Even more strikingly, it was shown that 75 percent of the cost of an average outpatient attendance was represented by the cost of travelling to and from the clinic, and only the remaining quarter was the cost of providing the actual treatment and drugs. If reasonable allowance is made for the opportunity-cost of time lost travelling, the transport-cost element in outpatient medical treatment rises to about 90 percent. This moves the authors to the intuitively convincing, though as yet undemonstrated, conclusion that a mobile health centre could either provide the same level of medical care at a reduced overall economic cost, or could increase both the level and the equity of medical care at no extra cost above that which is expended today by patients and the hospital taken together.

If the authors had established the cost of their proposed alternative, and compared it with what obtains at present, this would be a perfect demonstration of what could be achieved by the method of approach I advocated at a micro-level. The units of "output" (outpatient attendance), though not wholly ideal, are clear, measurable, and uncontroversial, and enough is known about the production-function involved to establish, with reasonable accuracy, the cost of alternative paths to the given end. Given the information in the papers referred to and the author's own proposal that an annual average of 2.5 outpatient attendances per person ought to be made possible in a country like Uganda, it becomes possible to determine, in addition, the optimum number and location of health centres throughout the country, having regard to population density, distances, and transport costs.

Thus, in its limited way, the method advocated has far-reaching practical applicability when units of "output" are measurable and

when enough is known (or can be found out) about the production-functions involved.

Doctor's Role in Low-Income Economy

Once there is an awareness of -- and an interest in -- the concept of cost per unit of output (however defined) and a realisation that this is of vital importance, a whole host of other discoveries follow which are of the greatest interest to students of the economics of social expenditures. M. King's pathbreaking symposium starts with the initial premise that a situation where the doctor: population ratio is 1:20,000 demands a radically different approach to the practice of medicine from one where the ratio is only 1:1,000. A doctor has to "spread himself thinly." It follows from this, King argues, that doctors in underdeveloped countries can only function effectively as leaders, teachers, and consultants of teams of medical auxiliaries, and that private or "one-man" practice, unsupported by such auxiliaries, is a social waste. Any medical task which is fairly simple or which occurs frequently ought to be devolved onto auxiliaries, whose training is one of the doctor's principal tasks. The study produces suggestive -- though not always conclusive -- evidence regarding the use of cheap drugs in the treatment of tuberculosis; that guided "self-care" can often achieve what a stay in a hospital can, and at no capital cost; that outpatient treatment of tuberculosis and mental illness can be as effective as full hospitalization, and vastly cheaper; that health centres are more efficient forms of medical care than hospitals for most medical cases; that adequate hospitals could be built more cheaply by concentrating on essentials. Indeed, the whole work is suffused with an urgent quest for getting maximum returns in terms of human welfare from pitifully scarce medical resources.

Once attention is concentrated on the proper aims of medical care, rather than on its conventional means, and provided that we succeed in defining these aims, in terms of standards of medical care, with enough precision to enable us to "price" alternative paths to their fulfillment, we may be on the brink of a revolution in methods of medical care in poor countries.

Health Aims for Planners

On theoretical grounds it would be desirable to proceed still further, toward a greater degree of generalisation of "health aims." Rather than defining our aims as standards of health care (e.g., no person shall live more than X miles from the regular visiting route of a doctor/auxiliary team, and no such team shall be responsible for a population of more than Y), one may be tempted to seek for "purer" welfare concepts. It would be more satisfactory

if health aims could be defined and health targets set along such lines as, e.g. --

> the incidence of malaria (or hookworm or TB) shall be reduced from the present X per thousand to X/2 in five years; or
>
> the index of morbidity shall be reduced from X man-days per annum per 1,000 of population to X/2 in 10 years; or, better still,
>
> the expectation of life at birth (or at some other specified age) shall be increased from X years to X + 10 within 10 years.

The statistical difficulties of applying this type of approach, for the poorer countries at any rate, are almost insuperable, and have already made a well-endowed Harvard medico-economic team abandon an African project which had been conceived along these lines. We would need accurate statistics about the incidence of disease, morbidity, and mortality, in countries where, at present, not even births or deaths are systematically registered. For proper scientific conclusions, we would also need comparable information about "control" populations which continue to get only the present level and type of medical care. Finally, we know too little about the "production function" of medicine to give confident estimates of the relative costs of achieving given aims by alternative means.

For all these reasons, progress towards refined "welfare" concepts of "output" is likely to be slow, at least until medical statistics improve. By the same token, there seems little hope at present of formulating workable criteria of the "optimum" level of health-care expenditures, having regard to the alternative uses to which resources could be put. This should not depress us unduly. The purpose of this paper has been to suggest that there is a practical, and as yet barely exploited, scope for testing and improving the efficiency with which resources are used in medicine (and by implication in other fields of social expenditure). The relevant technique, a close (if poor) relation of cost-benefit analysis, is analysing the costs of feasible alternative paths to precisely defined ends. The greatest obstacles in the way of successful exploitation of this approach will not be the technical ones of definition and measurement, but rigid attitudes of mind, which regard institutional innovation with suspicion and consider that higher productivity is only relevant and meaningful in commerce and industry.

King, Maurice, Medical Care in Developing Countries: A Symposium from Makerere, New York, Oxford University Press, forthcoming.

This book, an outgrowth of the conference, Health Centres and Hospitals in Africa, held in Kampala, Uganda, breaks important new ground. It marks a crucial shift in interest from tropical medicine to medicine in the tropics -- from interest in the eccentricities of human illnesses in tropical climate to interest in how the health of people living there can be improved, given especially the constraint of poverty.

Doctor King and his colleagues in East Africa are especially concerned with the tendency to import medical techniques and facilities appropriate to high-income countries into less developed countries. As practitioners, they were aware of the tendency to provide sophisticated and expensive medical care to a few citizens at the expense of consigning others, mainly rural people, to disease and death. Moreover, they experienced the total lack of literature to help the doctor forced to deal with a situation where there are far from sufficient doctors and capital. In less developed countries, medical service is a very scarce resource. The contributors to this volume are physicians turned economists attempting to maximize the health of the people with scarce personnel and money.

The book attempts to do three things: the first set of papers deals with general factors affecting medical care in low-income countries; the second, with how to treat specific medical situations (infant diarrhea, administering anaesthetics, ...) under primitive conditions; the third, with detailed information on supporting services (laboratories, teaching aids, ...). Appendices include a list of low-cost suppliers of medical equipment (mainly British), a checklist of the 100 most essential drugs, lists of

apparatus and reagents for a medical laboratory, and the like. These tasks are too great for a single book. However, the contributors seem to have felt the need to make as ambitious a beginning as possible in fields where this information is, in many ways, unpublished and unavailable.

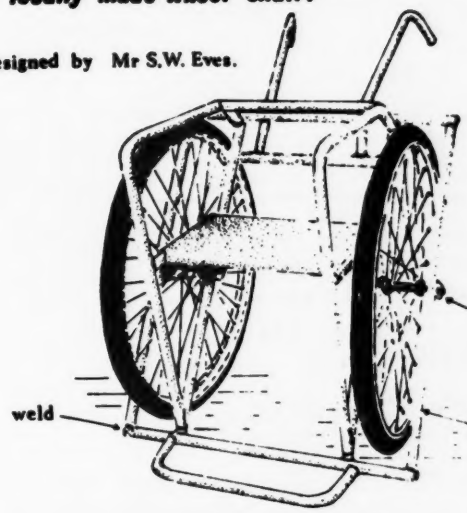
The central thesis of the book is that medical care in developing countries "differs sharply from medical care in industrial ones," that it is distinguished mainly by the poverty of the areas rather than their tropical conditions, and that the challenge is primarily one of training, organization, and methodology.

Many of the papers may be of great interest to physicians in less developed countries, but are much too technical to reproduce here. For example, they give suggestions on how to make a wheelchair locally from a bicycle and a pipe [see page 17], ways of performing various tests in a minimal laboratory, and how a maternity village was set up. Some more general papers deal primarily with organization, of a health center, for example.

Throughout the book, the concern for making a small number of doctors, money, and equipment go a long way is evident. This tone is set in the opening paper, "The Organisation of Health Services," by R. Jolly and the editor. They discuss the relative merits and costs of curative and preventive medicine in a part of Uganda. Finding that people near clinics and hospitals benefit much more than those further away, and carefully analyzing the costs of health centers to taxpayers and patients, they demonstrate that better health care for the region could be obtained for the same price by spreading out health service through use of mobile centers. One feature of their work is an "iso-care" map of the region. Another notable paper by R. Jolly, F. Kamunvi, P. Sebuliba, and the editor presents a complete economic analysis of a rural hospital.

A locally made wheel chair.

Designed by Mr S.W. Eves.



these only cost £6 ($ 17)

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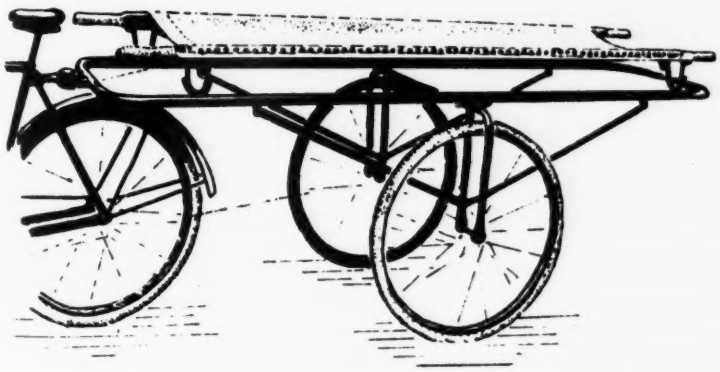

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CHILD NUTRITION

[The three selections in this section are from Pre-School Malnutrition; Primary Deterrent to Human Progress, Washington (D. C.), National Academy of Sciences - National Research Council, 1966, US$ 7.50, 355 pp.]

This volume contains the 34 technical papers presented to an important international conference in Washington, 7-11 December 1964. That meeting was the latest of a series sponsored by the National Academy of Sciences, which has been involved in research and dissemination of information about child health and nutrition. The three objectives of the conference were: to present and consolidate the evidence on the magnitude and consequences of child malnutrition; to review programs now in progress around the world which affect these problems; and to focus attention on available practical measures for improving the situation.

The conference had an important impact on thinking about development, especially in bringing about a new emphasis on child nutrition by the U. S. Agency for International Development.

Convincing evidence was presented at the conference that:

- there is an intimate connection between malnutrition and other childhood diseases, such that many deaths usually attributed to disease are probably the result of malnutrition;

The summary begins on the following page.

- there is strong, if not conclusive, evidence that malnutrition in early childhood results in

irreparable mental retardation, in addition to the recognized physical damage; and

- artificial, protein-rich foods can be made cheap and palatable, and can alleviate protein deficiency.

A summary prepared by the National Academy of Sciences is followed by two articles on production and marketing of a protein supplement in Latin America.

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Malnutrition in the pre-school child is one of the world's most serious health problems in developing areas. Not only is it killing and maiming the children of today, but also, through physical, mental, and emotional damage, it will handicap the society of the next generation.

The International Conference on Prevention of Malnutrition in the Pre-School Child established that:

1) Pre-school malnutrition is basically responsible for the early deaths of millions of children;

2) Of those it does not kill, pre-school malnutrition permanently impairs physical growth and probably causes irreversible mental and emotional damage; and that

3) Pre-school malnutrition is a serious deterrent to progress in developing countries; it weakens the productive capacities of adults surviving from the irreparable damages incurred in early childhood.

In developing areas, as many as 70 percent of the children may suffer from malnutrition. The maimed survivors become adults lacking the vigor and enterprise essential for productive advancement. Their shortened life span and decreased ability to produce gravely impede the physical, mental, and economic growth of the population.

The Effects of Malnutrition on Mortality

Infant mortality rates in an underdeveloped country may be only six to eight times as great as those in technologically advanced areas, but the mortality in the one-to-four-year age group may be 50 to 60 times greater.

This very high mortality in the pre-school child is not due to nutritional inadequacy alone. The transition from breast-feeding to bottle- or hand-feeding involves great risks from unsanitary practices, leading to diarrheas, infections, and parasites. These exaggerate the weakened condition due to malnutrition, and the malnutrition makes children unable to cope with the disease. Measles and respiratory infections common to children throughout the world are rarely fatal nowadays to well-nourished children, but cause high mortality among the malnourished.

The high mortality and morbidity resulting from malnutrition spring not only from ignorance, unsanitary conditions, poverty, and inadequate medical care, but also from failure -- even among professional personnel -- to recognize the extent of malnutrition and its effects.

The largest group of victims is within the age group of one to four years, referred to as the "pre-school" child. In this age group, there is the greatest need for adequate nutrition. Equally -- and with distressing consequence -- there exists for this age group the greatest neglect in providing adequate nutrition.

--On Physical Growth

The growth potential of children afflicted with malnutrition and disease, in every likelihood, is never reached.

A child inherits an assortment of genes that predetermine his potential, but each phase of his development is influenced by the interplay of inheritance and environmental exposures.

Malnutrition in the mother may handicap a child from birth. The fetus, however, does have first priority on the mother's resources and will achieve normal birth weight and normal development at the expense of the mother.

Growth of underprivileged children is accelerated with improved nutrition and environmental care.

The evidence indicates that, under optimal environmental conditions, growth of children is similar in most areas of the world, and that failure to adhere to the growth pattern is often an indication of ill-health. As the general health status of the people of developed countries has improved, there has been -- in addition to a marked decrease in morbidity and mortality -- a definite trend toward increased height and weight among maturing children, generation by generation.

--On Mental Development

That conditions such as apathy, inattention, and purposeless movements occur during the acute episode of protein-calorie malnutrition is without question. The larger question of whether there are undetected, permanent effects on learning ability, mental capacity, and behavior is still not answered satisfactorily. However, the possibility that protein-calorie malnutrition has an adverse effect on the development of the human central nervous system is predicated on several preliminary reports and on the basis that the growth of the human brain at time of birth is largely dependent upon protein synthesis.

Protein deficiency also has been implicated in disturbances affecting processes of internal inhibition and intensity of reflex action. Tests with experimental animals have shown clearly that the brain is irreversibly damaged by severe protein deficiency in infancy.

Major Specific Deficiencies

While the general debilitative effects of malnutrition in the pre-school child are largely due to protein-calorie deficiency, healthful nutrition requires the interaction of all essential nutrients.

Correction of calorie deficiency with carbohydrates alone may exaggerate protein deficiency. Correction of calorie and protein deficiency, while neglecting vitamin and mineral requirements, may exaggerate the symptoms of specific nutrient deficiency.

Three Aggravating Circumstances

The conference established that the problems of malnutrition in the pre-school child are aggravated chiefly by three circumstances:

1) Mothers do not know what to feed their children to maintain normal growth and development. The conspicuous effects of malnutrition are attributed to other causes. They do not understand that small children need generous amounts of foods supplying high-quality proteins.

2) Many families cannot afford to buy the food required by children. Even if good foods (such as eggs) are in their hands, they are traded or sold for things desired by the adults.

3) Ill-advised crop practices, emphasis on the raising of non-food cash crops, lack of transportation, lack of food

processing and preservation, all conspire to put the required foods beyond reach. Anthropological factors, social customs, superstitions, taboos, and religious beliefs also often operate to prevent giving children the foods they need.

Measures for Improvement

Any plan or program to combat malnutrition must be accompanied by ways and means of correcting these conditions. This requires total planning for a national approach, including agricultural, educational, health, and economic plans based on local resources and mores -- including the wishes of the people as well as their capabilities.

Agricultural programs must include in their objects not only the production of more food, but also the production of the protein foods so urgently required by the pre-school child and distribution in forms that the child can consume.

There are many ways to increase the food supply, including improved methods of intensive farming, better plant and animal selection and breeding, and wider use of fertilizers and pesticides. (In many countries in which food-production programs exist, however, populations are increasing more rapidly than production. Contributing factors include the complex problems of providing credit to farmers at reasonable rates of interest and of adopting land-tenure policies that create incentive to produce more foods.)

Another important factor in increasing food availability is the prevention of loss caused by rats, insects, weevils, molds, and other destructive agents. It was pointed out at the conference that such losses in India are three times the annual food deficit and that their elimination would do much to solve that country's immediate food problem.

Family food supplies can be increased by local programs that, despite their relatively small size, provide education and food for children -- particularly programs of home and school gardening and raising of chickens, rabbits, and other small animals. In suitable areas, fish ponds can provide greatly increased protein-food supplies. Wider use of seafood products is receiving much attention, and in a number of countries efforts are being made to develow low-cost, fish-protein concentrates.

Many high-protein foods are not being used to best advantage. Most promising of these are the oil-seed meals -- from cottonseed, soybeans, peanuts, sesame, and other oil seeds. These products --

containing 30 to 50 percent of relatively good-quality protein -- can be combined with cereals and flours to make foods almost as protein-efficient as milk, meat, fish, and eggs.

Development and introduction of products of this type require commercial cooperation and participation along with modern food technology and business management. The conference stressed the need for introduction of new foods through regular food outlets. Market surveys, acceptability studies, and commercial methods of promotion are essential.

Significant to progress in food-deficient areas is the U. S. Food for Peace Program, under which overseas distributions of American surplus commodities are purposefully designed to promote economic development and to improve local food production. Emphasis should be placed on nutritional improvement of these products by addition of vitamin A to skim milk and by enrichment of wheat flour, white rice, and corn meal with thiamine, riboflavin, niacin, and iron, whenever these cereals are sent to developing areas.

Education was discussed at length in the conference. There is a shortage of trained educational personnel. This shortage extends from international and national professional personnel to district and local workers engaged in the education of village mothers and leaders.

Education in the villages is often undertaken by workers with fixed programs that ignore what villagers and mothers actually are thinking and believing. Techniques are often brought from cities and are meaningless or confusing to villagers.

Nutritional problems cannot be isolated from the remainder of community problems. Nutrition must be part of a total program involving the total welfare and development of the community.

Major Requirements

The most pressing immediate need is for widespread distribution and availability of foods of value in combatting protein-calorie malnutrition from whatever sources and by whatever means of distribution.

More training programs are urgently needed at all levels, but especially those providing highly trained professional personnel who can understand all the facets of the problem, organize national programs to make the best use of available resources, and serve as teachers of other nationals.

The conference heard that in most villages there are only a few leaders to assist with any program brought to the village. These leaders are often confused by the large number of people who ask for assistance and cooperation in a variety or programs, few of whom know that the village leaders are already trying to carry out a number of other programs in various fields

National planning and cooperation, especially among ministries of health, agriculture, economics, and education are essential and should be encouraged by all international agencies interested in nutrition.

Long-range programs for permanent improvement must be considered in relation to the development of entire communities. They must, therefore, consider the motivation, wishes, and economic limitations of the people concerned. Since such programs involve local education, increased food production, changes in crops, improved water supply, sanitation, home gardens, infectious disease control, and many other items, each requires concerted planning and integration.

There can be no doubt of the gravity of the problems outlined in this conference. They require the fullest possible understanding and the most carefully conceived action -- commensurate with the need. Failure to meet this challenge would exact an intolerable price in human suffering and degradation.

EXPERIENCE IN DEVELOPMENT OF INCAPARINA FOR THE PRE-SCHOOL CHILD

Moisés Béhar
Ricardo Bressani

[From a paper presented to the International Conference on Prevention of Malnutrition in the Pre-School Child; proceedings of the conference were published as Pre-School Child Malnutrition; Primary Deterrent to Human Progress, Washington (D. C.), National Academy of Sciences - National Research Council, 1966, US$ 7.50, pp. 213-218.]

These are excerpts from the paper.

The problem of malnutrition, and particularly of protein-calorie malnutrition, is the most serious and widespread problem of the pre-school child. I would like to contribute to the analysis of the factors responsible for this condition and of practical ways for solving it by presenting some of the experiences acquired by the Institute of Nutrition of Central America and Panama (INCAP) during 15 years of dealing with the problem.

First, I would like to present the usual dietary pattern of pre-school children in underdeveloped areas and discuss the main reasons determining this pattern. I am going to use a rural, Indian village of Guatemala as an example. The situation is very similar, in terms of nutrients, even though the type of food varies in most other tropical and subtropical regions of similar ecological conditions.

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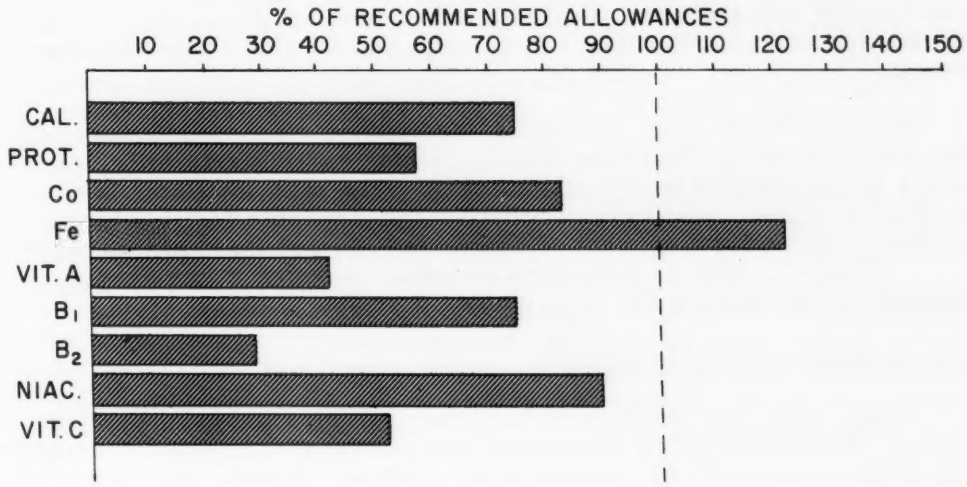
Figure I shows the dietary intake of children two to three years of age in Santa María Cauqué, a small Indian village in the highlands of Guatemala, only 35 kilometers from the capital city on the Pan American Highway. These ages were chosen because, before two years of age, a great proportion of children are still breast-fed.

Figure I. Adequacy of the Usual Diet of Children 2 to 3 Years of Age in Santa Maria Cauque, Guatemala.



The bars in Figure I represent the daily intakes of the most important nutrients as percentages of the recommended allowances. This dietary pattern fails to provide the amounts recommended for calories and most of the essential nutrients. The figure for total protein is not corrected for biological value; if this were done, the figure would be much lower, since most of the protein is of vegetable origin and is provided mainly by corn. The average consumption of animal proteins is only 2.6 grams per child per day. This is also reflected in the very low intake of riboflavin. The low intake of vitamin C shown in Figure I is not considered to be correct. Fresh seasonal fruits are probably consumed outside the regular meals and not recorded in the surveys.

The main reasons for this situation are related to food availability, food habits, and economic factors. In regard to availability, the estimation of proteins of animal origin available per capita in 1962 for the entire population of Guatemala was about 8 grams per

day. Obviously, the availability for the lower socio-economic groups is much lower.

As a result of cultural beliefs and practices, the share of the already small amount of animal proteins available to these families that is given to the small child is even less adequate. Acute and chronic infections, particularly diarrheal disease, are extremely frequent in these children; and during illness, the intake of protein-rich foods is still further reduced.

Economic factors are, of course, closely related to this situation, since foods of animal origin are much too expensive for these populations and since the limited market does not favor large-scale production and distribution, which could reduce their price to some extent.

Sanitary conditions, facilities, and education also interfere with the use by these populations of some foods, particularly milk, especially recommended for small children. The milk available to them is usually of poor quality; no facilities are available for its proper conservation and the concept of contamination and its consequences does not exist. Milk is therefore avoided, because it has been learned by experience that it produces diarrhea.

The Development of Incaparina

What, then, can be done under these circumstances? We have studied the possibility of correcting the problem by greater consumption of the basic staples, in this case, corn and beans, but found that this was not possible because of the low concentration and biological value of the proteins in these foods. It is physically impossible for children of this age to consume the quantities that would be required. This is the case even if the corn and bean preparations are combined in the best proportion to obtain the maximum improvement of the biological value of the total protein through mutual complementation of their respective essential amino acids.

It is evident, therefore, that independent of all the efforts that should be made to increase the production of all of the conventional foods, particularly those of animal origin, to improve the socio-economic conditions of these populations and to improve their educational and sanitary conditions, there is a great urgency for measures of more immediate applicability. Among these, INCAP suggested the possibility of developing nutritionally adequate foods to complement the present diets of the children. It was considered necessary, however, that they should be readily acceptable by the parents in view of their cultural beliefs and practices, and reasonably priced, so that they could be used by the population groups in

greater need. These were the basic principles that guided INCAP in the development of vegetable mixtures now known under the name of Incaparina.

In the formulation of these mixtures, first consideration was given to utilizing the present knowledge of factors determining the biological value of proteins, so that available protein sources could be combined in the best possible way to obtain products with adequate concentrations of total protein, and so that high enough biological value could be attained by complementation of the essential amino acids contributed by each of the individual sources. In addition to providing enough good protein, it was considered necessary for these new foods to provide adequate amounts of other essential nutrients in which existing diets were deficient. For this reason, the most convenient sources of vitamin A, calcium, and vitamins of the B complex, particularly riboflavin, were added.

Second, consideration was given in this work to economic factors. Locally available, low-cost raw materials were necessary. Cereal grains were chosen as the basic ingredients and supplemented with concentrates of protein and other essential nutrients. For protein concentrates, special attention was given to cottonseed flour because it was considered that, in spite of the technical problems involved in bringing this product up to the quality required for human consumption, properly processed cottonseed flour met most of the requirements basic to the success of protein-rich foods.

The main technical problem with cottonseed is the presence of a toxic pigment. Furthermore, application of excessive heat during processing decreases the nutritional quality of the product. Newly developed technologies now permit the production of good-quality, human-grade cottonseed flour which is not toxic, and which contains not less than 50 percent protein. Cottonseed can then be utilized, and it is the most readily available source of protein throughout most of the tropical and subtropical areas of the world where protein-calorie malnutrition prevails. This is particulary true for Guatemala and other Central American countries, where the production of cotton has been increasing very rapidly during recent years.

The calcium needed could be easily provided as calcium carbonate or calcium hydroxide. A natural source of carotene was originally tried as a source of vitamin A, but it was found more practical to use a synthetic preparation of this vitamin. Torula yeast was considered a convenient source of vitamins of the B complex.

The formula finally developed and which proved adequate in the extensive laboratory analysis and biological trials with different

species of experimental animals and, finally, with children, is composed of corn flour, 29 percent; sorghum flour, 29 percent; cottonseed flour, 38 percent; torula yeast, 3 percent; calcium carbonate, 1 percent; and vitamin A, 4, 500 International Units.

The nutrient content of the gruel prepared with this formula is compared in Table I with that of a gruel prepared with corn, very widely used for the feeding of small children, and with that of whole cow's milk. It can be seen that Incaparina compares very favorably in all the essential nutrients.

Table I. Comparison of the Nutritive Value of Incaparina with Milk and Corn Gruel.

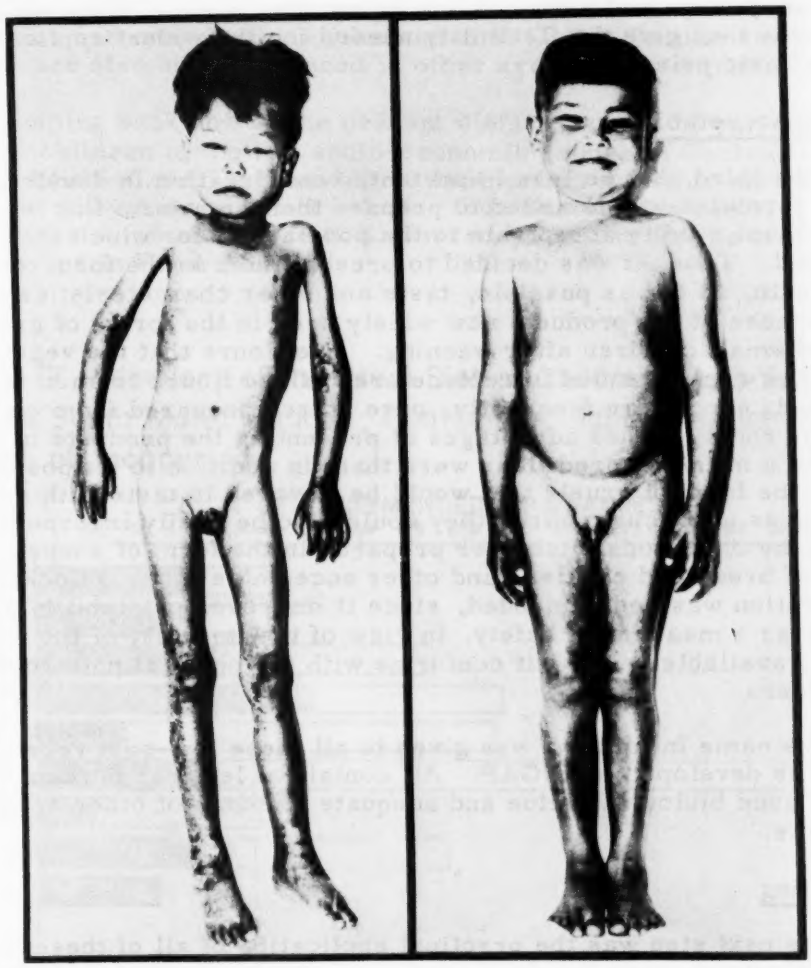
Content in 1 glass	Corn gruel*	Incaparina gruel*	Milk
Calories	86	138	141
Protein (grams)	1.0	6.9	6.9
Fat (grams)	0.4	1.0	7.6
Carbohydrates (grams)	20.2	25.3	11.3
Calcium (milligrams)	22	164	374
Phosphorus (milligrams)	22	174	168
Iron (milligrams)	0.0	2.1	1.0
Vitamin A (Int. Units)	0	1125	363
Thiamine (milligrams)	0.02	0.58	0.08
Riboflavin (milligrams)	0	0.28	0.50
Niacin (milligrams)	0.19	1.95	0.10

*Prepared with 25 grams of Incaparina or corn "masa" in one glass of water, boiling and sweetening with 12 grams of sugar.

Testing Incaparina

In biological tests, the growth of rats fed the vegetable mixture was only slightly less than that of the rats fed the animal proteins. Testing the mixture in children produced similar results. As a final test of the protein value of the mixture, children with kwashiorkor were treated successfully with this mixture as the only source of protein; the results are shown in Figure II. I would like to emphasize in this regard, however, that although we have proved that this can be done, the mixtures have been primarily designed and are recommended for the prevention of protein-calorie malnutrition and not for its treatment.

Intensive laboratory work continued, following the same basic criteria. It aimed at the development of new formulas, trying to



November 10, 1956 January 1, 1957

Figure II. Child with Kwashiorkor Before and After Diet Supplemented with Incaparina

improve their different characteristics as much as possible and to adapt them to other conditions, such as availability or cost of raw materials in other areas. Another formula which is already in commercial production is composed of corn flour, 58 percent; cottonseed flour, 19 percent; soybean flour, 19 percent; torula

yeast, 3 percent; calcium carbonate, 1 percent; and vitamin A, 4, 500 I. U. Many other formulas are already available, after careful testing, and new ones are being developed. The vegetable mixtures thus give the flexibility needed for the widest application of the basic principle.

Social Acceptability

The third, but no less important, consideration in developing these formulas was the need to prepare them in a form that would make them readily acceptable to the populations for which they were intended. Thus, it was decided to present them in the form of a flour with, as far as possible, taste and other characteristics similar to those of the products now widely used in the forms of gruels to feed small children after weaning. The flours that the vegetable mixtures were intended to replace are refined flours from corn or rice and, even more frequently, pure starch prepared from corn or starchy roots. Other advantages of presenting the products in the form of a mild-flavored flour were that, in addition to its possible use in the form of gruels that would be flavored to taste with sugar and spices as is customary, they could also be easily incorporated into many other local dishes or prepared in the form of soups, local types of bread and cookies, and other acceptable foods. Cooking the preparation was recommended, since it improves palatability and serves as a measure of safety, in view of the impurity of the water usually available. Also, it conforms with the cultural pattern of the consumers.

The name Incaparina was given to all these low-cost vegetable mixtures developed by INCAP. All contain at least 25 percent protein of good biological value and adequate amounts of other essential nutrients.

Marketing

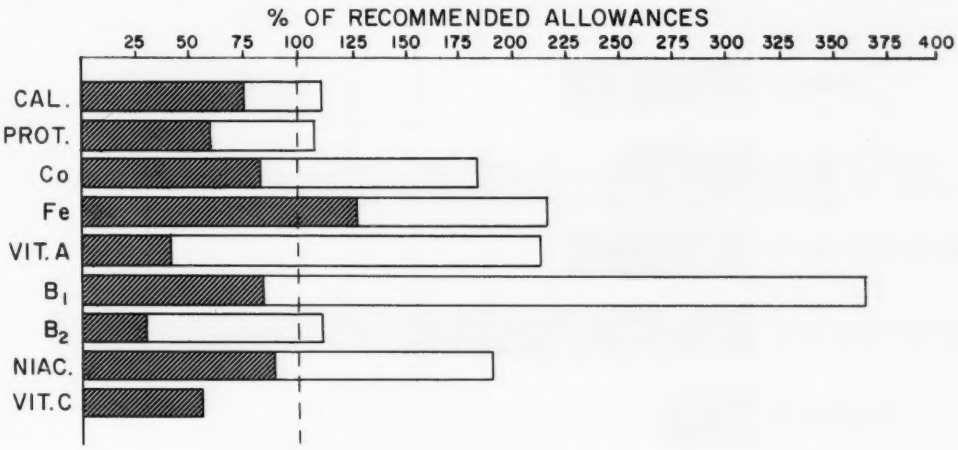
The next step was the practical application of all of these technical efforts to make the developed products readily available to the populations in need of them. After extensive field-acceptability trials, it was decided to give the formulas to capable and experienced industrial companies interested in producing and distributing the product through normal market channels. INCAP gives technical guidance, controls the quality of the product, and provides the proper stimulus.

The policy has proved to be sound. At present, Incaparina has been successfully introduced to the market in Guatemala and Colombia and is in different stages of early studies and programs leading to its commercial introduction in six other Latin American countries

where companies have been authorized by INCAP for this purpose. The interest of industry and governments in this development is growing tremendously, as we can see from the large number of inquiries and consultations received at INCAP. Similar developments are also being advanced in other areas of the world.

Coming back now to the present dietary pattern of our preschool children of the low socio-economic groups of Guatemala, the addition of one 75-gram bag of Incaparina, which is the recommended daily dosage and is sold for four Guatemalan cents, equivalent to the same amount in U. S. currency, will make the changes illustrated in Figure III.

Figure III. Adequacy of the Usual Diet of Children 2 to 3 Years of Age in Santa Maria Cauque, Guatemala, Supplemented with 75 Grams of Incaparina.



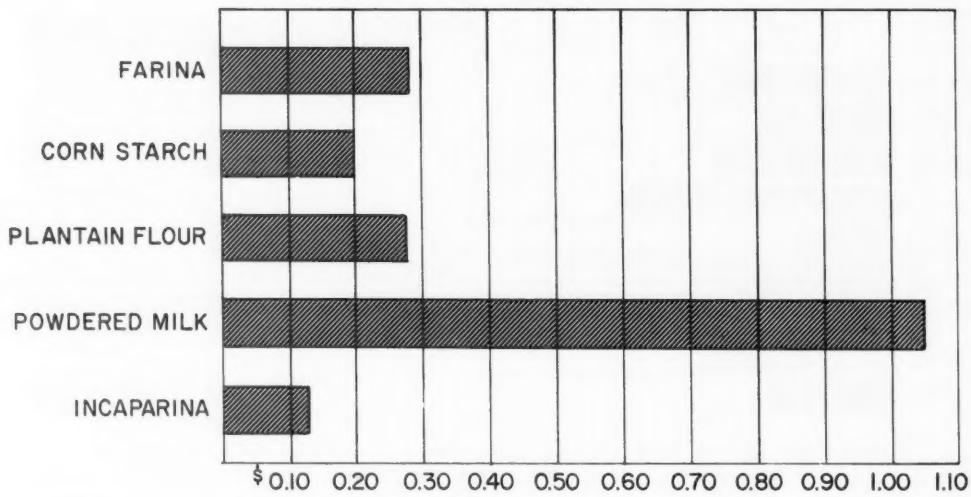
It can be seen that the recommended allowances for all nutrients are now covered, except for vitamin C, for which, as we indicated earlier, the values obtained by the dietary surveys do not seem to be correct ones. It should be particularly emphasized that the amount now shown for proteins has also been improved in its biological value.

To produce a similar improvement with milk, three glasses per day would be required. If this quantity of milk could be made available, the cost to the family would be three or four times

greater than the cost of Incaparina. Furthermore, the problems of acceptability and safety, under the conditions previously described, would still exist.

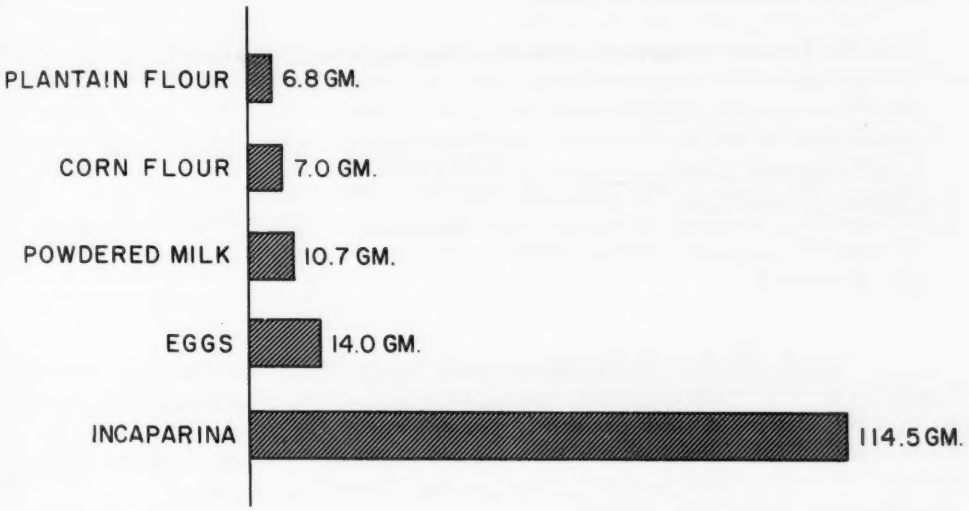
Another way of comparing the economical advantages of this type of food is presented in Figures IV and V. Figure IV shows the regular price of half a kilo of the products most used for the feeding of small children, compared with the price at which the same amount of Incaparina was introduced in the market. Figure V indicates how much protein can be obtained for one Colombian peso (the equivalent of 10 U. S. cents) when buying all these same products. In either case, the nutritional value of the total product or of the protein has not been considered. This should increase even further the advantage of Incaparina.

Figure IV. Cost of 500 Grams of Most Common Baby Foods.



We feel very strongly that, although the development and use of products like Incaparina cannot and should not be considered as the solution to the serious problem of malnutrition of the pre-school child, it can contribute significantly toward its solution. It provides a strong support on which educational and public health programs for immediate action can be based.

Figure V. How Much Protein Can You Purchase for U.S. $0.10?



THE ROLE OF THE FOOD INDUSTRY IN THE DEVELOPMENT OF INCAPARINA

W. R. Graham, Jr.

[From a paper presented to the International Conference on Prevention of Malnutrition in the Pre-School Child; proceedings of the Conference were published as Pre-School Child Malnutrition, Primary Deterrent to Human Progress, Washington (D. C.), National Academy of Sciences - National Research Council, 1966, US$ 7.50, pp. 220-223.]

These are excerpts from the paper.

This report will limit itself to the application of current business methods to the introduction of a new product, Incaparina, on the Colombian market by Productos Quaker, South America, and its parent, the Quaker Oats Company.

The successful introduction of a new food product on the more sophisticated markets of the developed countries of the world depends on the proper integration of the several functions. These include, among others, finance, marketing, manufacturing, purchasing, sales, advertising, and research.

A general pattern for the introduction of new products in the developing countries has evolved during the past years. The normal planning and activity is supplemented by two additional steps believed essential in the marketing of a product like Incaparina. This pattern was followed in Colombia.

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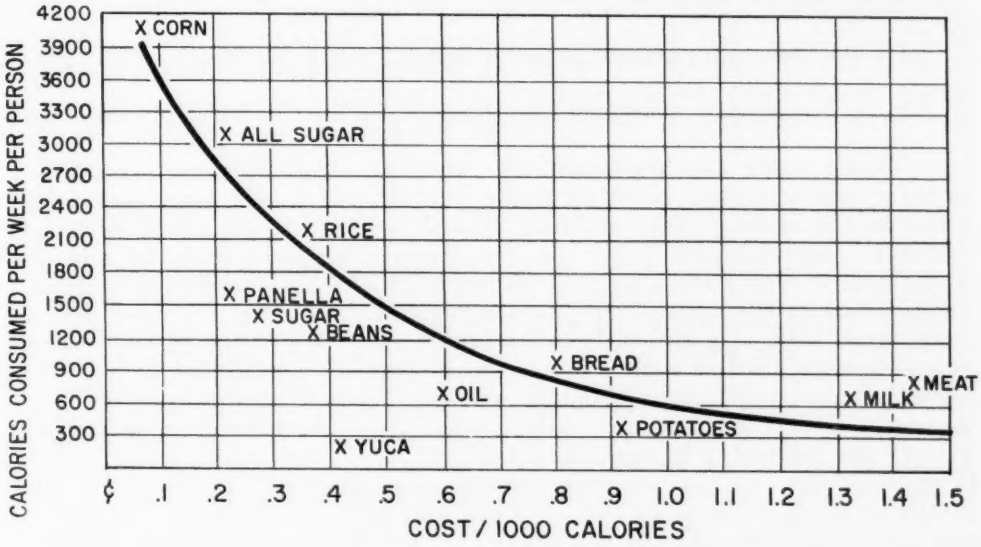
This step-by-step procedure may seem intolerably slow. However, our experience dictates that the best, most useful product will not move on the market without a carefully planned total approach. Every step is necessary to avoid making costly and possibly irreparable mistakes in relation to the product, costs, or people.

Step 1. Is there a place for a "generally described" new product on the market?

There can be no question that the less well-to-do Colombian pre-school children need a product such as Incaparina in their diet. A study of the diets of these people indicated that the price per calorie was the chief motivating factor in their purchasing pattern. This is demonstrated for another but similar population in Figure I, adapted from the work of Reh and Fernandez, Boletin de la Oficina Sanitaria Panamericana, Washington (D. C.), Pan American Health Organization, Supp. 2, pp. 66-89, November 1955. The colada, soup, and cereal baby foods are widely used in the country. Incaparina could fit into each of these categories, and preliminary product trials indicated that it was in an acceptable taste range.

Figure I Relationship of Food Consumption to Calorie Cost.



Step 2. Do we have the purchasing and production capability to buy the proper raw materials and manufacture the product at a given price?

Productos Quaker had the production, purchasing, and sales experience, from our normal course of producing food and feed products for the Colombian market, to make close approximations of costs. These indicated that we should be able to market Incaparina at approximately 150 percent of the cost of degerminated corn and 90 percent of the cost of rice at the retail level. The biggest problem would be purchasing the proper cottonseed flour. Maximum cooperation from Grasas, South America, the major oil-seed processer in Colombia, was solicited and received. Their cooperation with INCAP and Quaker was a major contribution to the program.

Step 3. Do we have the properly oriented marketing organization to plan the marketing strategy, produce the proper advertising, and distribute the product at consumer point of sale?

Productos Quaker was well established in Colombia. They had national distribution of many food items; they had excellent management and a closely knit manufacturing and merchandising group, most of whom were nationals who knew Colombia and its market well; they had the personnel and guidance to carry out a full-scale plan. The parent company had broad international experience in the food business.

Step 4. Develop the product.

a) Gain the understanding and support of the Ministry of Health.

b) Gain the understanding and support of the medical profession.

These steps are not normally required steps but are essential in this type of product. With these projections and a manufacturing and merchandising staff in hand, it was decided to go ahead with the project. An application for the commercial production of Incaparina in Colombia was filed late in 1960 with INCAP in Guatemala. Upon acceptance of the application, management appointed a long-time employee, who is a Colombian national, to take charge of the project. He was staffed with a chemical engineer, a chemist, a nutritional chemist, a bacteriologist, and a dietitian. Immediately thereafter, the management began soliciting and receiving the support of the Ministry of Health, health centers, and the medical profession. Demonstrations were established in clinics, churches, and institutions in order that the medical and health authorities could see firsthand the value of the product for the Colombian population. This activity culminated in a two-day meeting of public-health officials and the medical profession at both the local and national levels early in May 1963. The participants discussed malnutrition in the pre-school child and current results when Incaparina was fed. The

company made its total plans for distribution, advertising, and merchandising known at this meeting. A great deal of effort was expended to keep the proper people informed of plans and results before test marketing was begun. Without the enthusiastic support of the proper Colombian authorities, the future course of the project would have been extremely difficult if not impossible.

Step 5. Consumer-test the product. Repair product for any weakness shown by test.

INCAP had, of course, developed and thoroughly tested the product for efficacy. This fact, coupled with their magnificent cooperation in all phases of the program, served to diminish the developmental side of the program immeasurably.

Several acceptance tests were successfully run. Finally, both cottonseed and cottonseed-soy Incaparina were found to be equally acceptable in a 400-family test. The product was ready for the test market.

Step 6. Study consumer attitudes, and marketing and advertising strategy.

In the meantime, consumer attitudes had been studied in a five-part survey of 150 lower-income families. This showed that the consumers in the intended Incaparina market had a high regard for the food values of milk, meat, eggs, and fish, but simply could not afford these high-cost calories in spite of their nutritional value. An advertising and merchandising campaign rested on these comparative product qualities and results when Incaparina is properly used.

Step 7. Market-test the product and marketing strategy.

The test-market campaign was launched in the City of Cali, which represents approximately 10 percent of the national market. The product was manufactured in a 15-ton-per-month pilot plant and distributed through about 1,000 retail outlets and 16 health centers. Radio was used as the major advertising medium (360 spots per month), since many of the intended purchasers were illiterate and this medium was their normal contact with the outside world. Merchandising was carried out by means of approximately 800 meetings, demonstrations, and film showings. Information folders, posters, professional bulletins, recipes, and fliers were used profusely in the campaign. The close cooperation of the health centers and medical profession was of major value to the program. The advertising and merchandising were based on the belief of the people in the value of meat, milk, eggs, and fish, woven into a

"shock treatment" in the old, old "before and after" story related to proper feeding of Incaparina to the undernourished child.

Incaparina was priced at 1.30 pesos per 500 grams at retail, and 1.05 pesos to institutions. Table I shows the protein value received by the customer.

Table I Grams of Protein Purchased for 1 Peso

Incaparina	114.5
Eggs	14.0
Powdered Milk	10.7
Corn Flour	7.0

Step 8. Review market tests and repair any weakness in the total program.

The test-market results were summarized through further surveys. These results (Table II) show that about 90 percent of the Colombian public were aware of Incaparina and that radio had been a very effective advertising medium for the strata of the population for which Incaparina was intended.

Table II Where Consumers Heard about Incaparina (88.1 percent of survey knew of product)

Monthly Income (pesos)	Number	Radio (%)	Health Ctr., Hospital, Doctor (%)	Friends, etc. (%)	Retailer (%)	Other (%)
2,000+	20	30.0	20.0	25.0	15.0	10.0
1,000+	55	50.9	12.8	20.0	9.1	9.2
1,000-	197	57.4	19.8	11.2	8.6	3.0

A larger percentage of the low-income families than of the higher-income brackets was using Incaparina. The data in Table III demonstrate a good penetration into the low-income homes.

Table IV shows a rather broad use of Incaparina by the whole family. The children are, however, the major customers. We have some further indications that the pregnant woman and working man recognize the value of this food for themselves.

Table III Survey of 700 Families by Income Class as Users of Incaparina

Monthly Income (pesos)	Number of Interviews	% Users	% Non-Users
2,000+	100	15.0	85
1,000+	200	20.0	80
1,000-	400	35.5	64

Table IV Age Groups Using Incaparina

Monthly Income (pesos)	Number	Babies (%)	Children (%)	Adults (%)
2,000+	35	11.5	45.7	42.8
1,000+	76	5.3	52.6	42.1
1,000-	131	10.9	49.1	38.8

The results shown in Table V show the value of the health centers in the campaign. Approximately one quarter of the low-income groups buy Incaparina at the health centers. It further demonstrates the value of distribution in the approximately 1,000 retail outlets. The customer must have a convenient source of supply.

Table V Where 219 Users Buy Incaparina

Monthly Income (pesos)	Number	Retail Outlets (%)	Health Centers (%)	Gift (%)	Don't Know (%)
2,000+	18	94.4	5.6	0	0
1,000+	45	88.9	4.4	0	6.7
1,000-	156	71.2	24.4	0.6	3.8

The retailers have maintained the price of 1.30 pesos remarkably well in spite of periods of short supply. Most of the product was sold at 1.30 ± 0.10 pesos on the total market.

Step 9. Go-or-stop national marketing, depending on results of market test.

The attributes of Incaparina that most impressed our customers were "a good food for children," "a good food," "it has proteins, vitamins, and minerals," and "it replaces eggs, meat, milk, and fish."

These same market surveys showed that we will need to stress the amount of Incaparina per serving and to make more recipes available for variety in the national introduction, in addition to the material used in test market.

The results of surveys indicate that the market test was highly successful, and production for the national introduction of the product is now under way. The progress that has been made during the test-market period could not have been accomplished had it not been for a most enthusiastic team on the job, a thoroughly tested product, the full support of public-health and medical practitioners, and a thoroughly planned program that was conducted as planned. The fact that Quaker was established on the ground and had the capital to underwrite the program contributed in no small measure to the apparent success of the project.

PLANNING: COUNTRY PROBLEMS

The literature about planning for economic development can seem remote from day-to-day planning problems. Most has been written by men who are not themselves planners. This section contains selections from conference presentations by men who are: K. S. KRISHNASWAMY of India, In Sang SONG of Korea, Adalbert KRIEGER Vasena of Argentina, Prayad BURANASIRI and Snoh UNAKUL of Thailand, and Armand FABELLA of the Philippines.

Three selections originate in speeches to the Eighth World Conference of the Society of International Development, an international association of over 5,000 development professionals representing all fields of interest and from 102 countries. Two were originally presented to a Conference on Economic Planning in Southeast Asia, East-West Center, Honolulu, Hawaii. In both cases, circumstances obliged the planners to be brief and encouraged them to concentrate on their real problems.

PLANNING IN INDIA: AGRICULTURE AND INDUSTRY

K. S. Krishnaswamy

[From a speech to the Eighth World Conference of the Society for International Development, New York, 18 March 1966. Proceedings of the conference will be published as International Development, 1966 by Oceana Publications in late 1966.]

These are excerpts from the speech.

In the discussions of the last two days, acceleration of agricultural development and control of population growth have been put forward as crucial factors in dealing with the problem of poverty. Prima facie, this seems right; with so large a part of the population, in India for instance, depending on agriculture, there cannot be any basic improvement in standards of living if agriculture stagnates. Similarly, with the reduction in the death rate -- which is, and should be, an object of deliberate policy -- the task of improvement in standards of living becomes exceedingly more difficult than it need be if, over a period of years, the birth rate is also not brought down. But, accepting these requirements, the question is: how do we fit them into the development process?

Planning Agricultural Development

Let us take agricultural development first. Here, my observations are based entirely on

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Indian experience and problems. In the last 15 years, agricultural production in India has gone up by nearly 60 percent, a compound rate of growth of about 3 percent. Initially, much of this increase was the result of an increase in area under cultivation. However, in the last eight years, increases in production have come about mainly through additions to yield per acre. In the main, these have been associated with increases in area under irrigation, and with changes in the cropping pattern. The methods of cultivation have largely remained traditional, and have depended on manures and seeds of the established type.

There is little doubt, in India as elsewhere, that further growth of agricultural production is materially dependent on a rapid increase in yields per acre. This means that we have to go in a big way for intensive application of fertilizers, hybrid seeds, pest control, more modern storage, and so forth. Simultaneously, we have to supply more irrigation, better access to markets, greater incentives for using the inputs and technical knowledge that will be made available. The problem here is not whether these should be supplied, but how.

Industrial Inputs for Agricultural Growth

This is the point on which I should like to focus attention. Seeds apart, none of the new inputs needed for agricultural development is produced by agriculture itself. Construction materials for irrigation and road projects, electric motors, pumps, cables, and so forth, as well as fertilizers and pesticides, are all industrial products. They have, therefore, to be produced outside of agriculture, or they have to be imported. Except insofar as their import can be secured through special measures of foreign-exchange financing, the rate of increase in the supply of these inputs will be limited by the rate of increase in exports which can be obtained from existing or slow-growing agricultural production. This is because, in the absence of a flourishing industrial sector, the bulk of exports in a country like India necessarily has to come from the agricultural sector, either directly or through industries using agricultural raw materials. This, in practice, constitutes a serious limitation on what we can do on our own.

What I have said may be interpreted, in one sense, as a case for larger external support for agricultural development. But what form should this support take? A look at some of the magnitudes involved will help.

The calculations we have made in India show that, in the next 10 years, the requirements for fertilizers will increase to more than four times the current level. We are planning to use a million tons of nitrogen in the next agricultural year. This has to go up to

2.4 million tons by the end of this decade and over 4 million tons by 1975-76; available supplies will have to increase at something like 400,000 tons of nitrogen every year from now on.

The magnitude of this problem can be seen by looking at the plans for meeting the need for one million tons next year. Of the one million tons, a little over a half will come from domestic production; and nearly 450,000 tons will have to be imported. If we do not bend our energies to producing more of the fertilizers domestically, the import bill for fertilizers will very shortly become a staggering one. To meet the Indian demand, world production itself will have to be planned to increase more rapidly! Naturally, we feel that if all the additional supplies are to come from new units, as many of these as possible should be established in India. The crux of the agricultural programme lies, in other words, in larger industrial production -- that of commodities like fertilizers.

I have chosen fertilizers as an example because it reveals the problem most clearly. An increase of 400,000 tons a year means, in terms of new production units, that at least two large-sized plants need to be set up each year. The costs involved will press heavily on foreign exchange year after year -- unless we establish internally a capability for producing the equipment required for setting up fertilizer plants. This again is part of the industrial complex we have to develop.

Integrated Development

The dimensions of the problem become clear only when we view what is needed over a period of 10 to 15 years. When we look at it this way, industrialization becomes a precondition for agricultural development, at least in a country like India. To put it differently, we cannot improve agriculture to desired levels by working exclusively within that sector. A great deal of the investment effort will have to be in the industrial sector; and when we work this into our pattern of plan investments, it seems as if we are not paying adequate attention to agriculture. This is far from true; the test of agricultural priority is whether or not those industries supplying agricultural inputs have been given the importance they deserve in industrial planning.

Planning for national development must have multiple objectives. One of these is greater self-reliance -- that is, not autarky, but an ability to produce the consumption goods and the investment goods that we need -- taking into account the scope for international exchange. The food-for-peace programme, the emphasis on agriculture, etc., are all envisaged as means of reducing the dependence on imports while maintaining certain standards of food consumption. The emphasis on aid policy these days is of aiding those who will

learn to help themselves. The poorer countries cannot begin to help themselves unless they find a means of enlarging their supply of investment goods.

Investment goods, no matter where they are used, all come from the industrial sector. In theory, it is possible for a country endowed with rich natural resources -- such as oil or nonferrous minerals -- to use increased production from these sources for obtaining investment goods. But, when the primary industry in a country is agriculture, the scope for obtaining capital goods through international trade is very much limited. This is so partly because additional production from agriculture gets drawn away into domestic consumption. If this tendency is to be contained, drastic measures of internal control have to be instituted. Such controls create serious social and political problems. Even when these problems are faced, as is being attempted in India, the world market conditions are not particularly favourable for large or rapid increases in export earnings from primary products.

The burden, once again, shifts from agriculture to other sectors. The industrial sector has to be the source of a large and growing supply of investment goods and of manufactured consumption goods. Otherwise, there can be no move towards self-reliance in a country like India.

I do not want to go here into the alternatives of import substitution and export promotion. Both are necessary, and both are, in the final analysis, dependent on developing efficient industries, subserving both of these purposes. Moreover, in the modern technological context, many of these industries have to be developed together if they are to function with maximum efficiency in helping to narrow, if not to close, the trade gap. This understanding is becoming more explicit in plans and programmes that developing countries are working out. It would, at this stage, be unhelpful for international understanding if the reasons for pressing ahead with import substitution, industrialization, and so forth are not seen in their proper context.

Planning for national development is a matter of integrated growth. What one has to look for, therefore, is whether the links between the different sectors are truly established in a manner conducive to all-round development. The interest of countries like India in rapid industrialization derives from the direct relevance it has for both agricultural development and balance-of-payments viability. It is not very helpful to take the view that agricultural development is being hampered by a romantic approach to industrialization in the underdeveloped countries. Let us by all means press ahead with agriculture, education, and so forth. But let us not, in the process, act as if industrialization has now become a dirty word.

PLANNING IN KOREA: PROJECT, PARTIAL, OR COMPREHENSIVE?

In Sang Song

[From "Some Observations on Development Planning," a speech to the Eighth World Conference of the Society for International Development, New York, 18 March 1966. Proceedings of the conference will be published as International Development, 1966 by Oceana Publications in late 1966.]

These are excerpts from the speech.

One of the latest publications on development planning lists names and addresses of 136 central planning agencies. My experience, therefore, gained mainly from Korean development planning, can hardly be expected to be new or unique. Nevertheless, it is my hope that the lessons I have learned from this experienced will throw additional light on some of the already familiar issues.

Political Requirements

If a nation is to indulge in development planning, the first and most important requirement, I believe, is strong leadership and stable government. Under a weak leader, it is unlikely that a good development plan will be formulated, and it is even more unlikely that a development plan will be efficiently executed. Without the unreserved backing of a strong leader, the planning commission will find itself adding one more empty paper to the already crowded government records or

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one more confusion to the already complicated national economy. If the government is unstable, even the best plan will turn out to be useless. Two political revolutions in less than two years had a great deal to do with the relatively late launching of the first five-year plan in Korea.

My following discussion on planning will therefore be meaningless in countries where strong leadership and stable government are absent. But, if this fundamental requirement is met, the next task is to select an appropriate approach to planning.

Planning: Project-by-Project, Partial, or Comprehensive

Should development planning be based on a project-by-project approach, or should it be comprehensive, encompassing both public and private sectors? The current controversy on the appropriate approach to development planning seems to assume that a clear distinction exists between three types of approaches: project-by-project, partial, and comprehensive. One development economist even goes so far as to suggest that these three approaches constitute sequential stages of development planning, and that a nation would do well to adopt that particular approach which is appropriate to the stage of the nation's economic development.

I have no quarrel with the conceptual distinction, but I doubt that such a distinction is really helpful in practice. I am particularly skeptical about the suggestion that only one approach is appropriate for a particular nation of a given economic status.

In the first place, I cannot see how planning based on the project-by-project basis qualifies as development planning. Past experience shows that the project approach becomes no more than a collection of projects already under way. As such, it lacks the crucial element implied in planning -- the deliberate attempt to ensure faster growth of a nation's economy than would otherwise occur. I am saying this notwithstanding the plausible contention that "without sound projects there will be no sound plan." As you all know, the converse, "with sound projects there will be a sound plan," is not true. A conglomeration of individual projects, each designed independently and without long-term consideration, could easily result in over-investment in one field at the cost of the rest and in preferential treatment of a few businessmen who happen to be capable of producing "sound" projects in the initial stage. It would probably be more meaningful to say that, "without a sound plan, there will be no sound projects" -- sound not merely in the sense of commercial viability, but in the sense of overall national economic development as well. In this case, the Keynesian dictum -- "individual virtue does not necessarily bring about social gains" -- comes to mind.

I am much more sympathetic with the partial planning approach, which contends that an undeveloped country, faced with a poorly organized market, unreliable statistics, and inefficient administrative organization, should confine its plan to the public sector alone so as to permit an intensive use of limited resources available for planning. As an actual participant in plan-making, I am fully aware of these limitations. In fact, in view of these constraints, I am inclined to believe that it is a great virtue for planners to be modest in setting an objective target and to find satisfaction in a less refined plan, particularly with regard to the private sector. Even so, I am not ready to accept the tenet that, because of these constraints, a developing country should settle for less than a comprehensive plan.

After all, the real concern of those dealing with the national economy, including development planners, is the future course of a nation's economy in toto. Furthermore, without concrete knowledge of the private sector, it is doubtful that one can plan for the public sector. Take the example of power and transportation. These two fields are generally considered to belong to the public plan. But, without estimates of present and future demand for power and transportation, which are mainly in the domain of the private sector, it would be futile to expect that sound planning for power and transportation be possible. Such a need for knowledge of the private sector does not, of course, make it imperative to have a definite plan for the private sector. One can still leave the private sector out of the plan. But this, I believe, is an unwise course to follow. If planners must undertake the difficult task of projecting the future path of the private sector anyway, I wonder why they should not go one step further and explicitly incorporate it into an overall plan.

The potential gains from such a comprehensive plan -- an "unbalanced" comprehensive plan, if you like -- seem to more than justify the extra cost. The plan makes the general public aware of what the government is expecting from them. It also clarifies how the government is going to help the public in return. When everything is explicit, the government is probably in a better position to justify unpopular policies. Moreover, the plan will give a sense of participation to the general public, both in terms of bearing responsibility and reaping the fruits of success. The importance of public acceptance of a plan, as a crucial determinant of success, cannot be overemphasized.

The Imperfect, Comprehensive Plan

A comprehensive plan thus formulated will be far less than ideal. The planner, however, should not be too apologetic about it, as long as he is convinced that, under the given circumstances, the

best effort was put into it. Neither should he be timid in employing modern techniques and equipment, such as the input-output table and linear-programming, high-speed computers. If conditions are not ripe for effective use of these techniques and facilities today, the experience will be a valuable guide to their full utilization tomorrow.

The important thing is to keep in mind the limitations and the incomplete nature of the plan. The planners should never entertain the view that, once a plan is formulated, it should be followed at any cost. It is one thing to try to make a plan a reality, but it is something else to force the people to carry out the plan, as has been practiced in some Communist countries. One certainty in every plan is that it will never be realized in practice. The unforeseeable contingencies are too numerous to be taken into consideration at the planning stage. Planners should have enough wisdom to make the plan flexible and enough grace to admit their inevitable mistakes. Only through trial and error can planners expect to improve their product. Planners will find it always helpful to have ready alternative plans, which may be substituted in case of need.

Although I am in favor of a comprehensive plan which encompasses both public and private sectors, I am not preaching for an overextended plan which attempts to map out every single detail for the private sector. The government of an underdeveloped country would not have the administrative, technical, or financial capability to execute such an ambitious plan. While the prospect of success for such a plan is indeed slight, there is also every possibility that it could adversely affect economic development through unnecessary interventions. Hence, the plan for the private sector should be geared mainly to an active encouragement of private initiative. This would demand serious efforts to repeal artificial restrictions and regulations.

Last year, Korea undertook important steps in such a direction, firstly, by adopting a fluctuating exchange-rate system and, secondly, by undergoing a sweeping interest-rate reform. The result is encouraging on both fronts. The flexible exchange-rate system has greatly contributed towards stable prices and export promotion. The interest-rate reform is beginning to effect the mobilization of domestic capital by encouraging saving. These experiences are still insufficient to warrant definitive conclusions, but I am strongly convinced that, by promoting private enterprise and free-market system, planners can contribute a great deal towards economic development.

Education Priorities

The emphasis on free society reminds me of a related issue -- investment in education. Unlike investment in factories and equipment, investment in education requires a long gestation period and huge sums of capital. Indeed, we were quite skeptical about the value of investment in human resources. However, the ample supply of technical manpower constitutes our major source of strength in development activities. Even so, the lingering problem of shortage in available capital should not be neglected, and thus priority should be given to investment in selected fields of education which promise to yield higher rates of return.

Domestic and Foreign Saving

Finally, planners can hardly ignore the strategic importance of the problem of foreign exchange in making the overall plan a success. I need not remind you of the importance of foreign exchange as a potential bottleneck in a development plan. It is sometimes hard to believe that foreign exchange is only a means to an end in a development plan. It looks as though the pendulum of foreign exchange has overswung.

At present, the shortage of domestic capital in Korea is as serious as the shortage of foreign exchange, if not more serious. Too often, machinery and raw-material imports are limited, not because foreign exchange is unavailable, but because businessmen are not able to procure enough domestic capital to pay for factory construction and laborers. Once more, the importance of saving is brought into focus. The need for a sound fiscal policy that can channel public funds to investment projects is as great as ever. Foreign aid and foreign loans are always useful instruments to have. But, there is no substitute for people who are willing to tighten their belts for future betterment. In a way, a major objective of economic planning is to encourage the development of such an attitude on the part of the general public.

PLANNING IN ARGENTINA: FAILURES IN IMPLEMENTATION

Adalbert Krieger Vasena

[From "Some Aspects of the Argentine Planning Experience," a speech to the Eighth World Conference of the Society for International Development, New York, 18 March 1966. Proceedings of the conference will be published as International Development, 1966 by Oceana Publications in late 1966.]

These are excerpts from the speech.

Attempts to apply development planning methods in Argentina go back approximately 20 years. After the end of World War II, there was a long stage that could be defined as stagnation. Short expansive intervals were followed by longer lapses of economic recession, accompanied during all these years by a process of acute inflation. The conclusion can be drawn that, in Argentina, economic planning has not succeeded and that, on the contrary, the mild attempts made have defeated themselves.

An Historical Review

From 1946 to 1955, the Argentine Government enacted two plans by decree. The First Five-Year Plan, covering 1947 to 1951, rather than a comprehensive development plan, was a mere government program intended, according to its authors,

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"to satisfy needs of social and defensive character." This period coincides with a near-total nationalization of public utilities, with a peculiar reform of the financial and banking system, with severe exchange and import controls, as well as with a vigorous impulse given to the "light" industrial sectors. The same period is characterized by a lack of investment in the basic sectors and in the economic infrastructure, and by a severe stagnation of the agricultural sector. In view of the resulting serious disruption of the economic and financial system, which had broken down in 1951-52, the Government adopted several measures of a deflationary nature and, a short time afterwards in 1952, the Second Five-Year Plan was enacted. This second attempt did not succeed either and the Argentine economy continued to deteriorate.

In 1956, Raúl Prebisch presented the Plan of Economic Recovery, which was only partially applied in 1956-57. It was not a development plan in the macroeconomic sense, but it pointed out very clearly the serious, existing problems and briefly suggested the short- and long-range policies to be applied in order to overcome the grave economic and financial crisis. The necessity of implementing the short-range program and of complementing it with a more comprehensive plan was clearly stated. A proposal was furthermore made for undertaking a basic economic study.

In 1958, the new Government announced a Stabilization and Development Plan, but there were no provisions for its "implementation" since it only aimed at identifying some basic objectives in certain priority sectors of the Argentine economy. As a matter of fact, the government program rather stressed the necessity of attaining stabilization and, for the first time, these policies were applied.

In 1962, the National Development Council was created and undertook the formulation of a new plan. In 1965, it published the "1965-69 National Development Plan," which has already been in operation a year. The plan was seriously worked out on the basis of the most up-to-date macroeconomic methods, and set goals and priorities for the various sectors of economic activity. However, so far, no policies or measures have been specifically devised to carry it out, that is to say, no major advance has as yet been made to pass from the forecast or projection stage to the implementation stage.

Difficulties in Planning Practice

The Argentine planning experience seemingly indicates the choice of a planning method one may define as "from the top down." In a mixed economy, such a method is, at most, nothing more than

a government plan, where the private sector is no active protagonist but a mere spectator in the selection and attainment of the enumerated goals. Plans formulated in this manner, even if worked out with the best of intentions, receive very little understanding and support from those sectors which, indeed, will have to actively participate in the final execution. Such planning schemes from "the top down," which many Latin American economists are inclined to regard with great favor, involve a great risk of failure because they do not elicit the backing and support required for their successful implementation. This issue has been very clearly explained by Albert Waterston in the INTERNATIONAL DEVELOPMENT REVIEW of December 1965 [and in the DEVELOPMENT DIGEST of April 1966].

Let us enumerate some of the major difficulties encountered when planning in a country such as Argentina.

1) There tends to be a break between the formulation and implementation of the plan. The responsible planning staff usually prefers to confine itself to the task of formulation, without taking a position or interesting itself in the actual policies and measures to be devised and implemented in order to make the carrying out of the plan possible. No matter how perfect the planning techniques might be, the resulting plans are nothing but worthy laboratory and research work unless positive steps of economic policy are adopted and applied.

2) Such planning tends to overlook the great problems connected with administrative capacity. In Argentina, with a large public sector including most of the public utilities, the Government operates very ineffectively and with extremely low productivity. Moreover, there is insufficient coordination among the various state agencies, each pushing ahead to control the most resources possible, all of which results in a very significant fiscal deficit. Therefore, as a first task, the planner ought to begin by planning the public sector, because the possibility of avoiding or clearing up the bottlenecks that prevent economic development depends mostly on the result of these sectoral plans.

3) At times, the planning activity has been an excuse for postponing taking definite and forceful steps to meet the real problems which act as brakes on economic and social development. As a matter of fact, the danger of planning is that, if there is no clear political will to develop and no acceptable statistical information, the

planners have many excuses for delaying the implementation of the development plan, and the preparation and execution of projects. In the meantime, no steps are taken to face the pressing short- and long-range problems.

4) The planners seem to be very little interested in problems of savings and investment. The mobilization of internal resources, for both the public and private sectors, is taken for granted. In the future, it will be necessary to employ planners versed in financial and fiscal theory and practice.

5) Another problem is inadequate participation of executives from the private and public sectors in the formulation of the plan. Projections made only with incomplete or inadequate statistical data are of little or no value. There results a total lack of support on the part of the private sector which, on the contrary, sees planning as a greater degree or a new form of economic intervention. The same can be said with regard to the participation of trade unions.

6) The plans have disregarded public opinion. Whenever a great display of publicity was made, it was generally in terms not easily understood by people and without any reference to the responsibility and efforts that should be made.

7) There has been a shortage or lack of specific projects to attain the plan goals.

8) In formulating the plan, feasible alternatives from which a choice can be made should be presented by the planners to the political authorities, and the fiscal, monetary, credit, income, and other policies which are necessary to accelerate the rate of growth with monetary stability should be very clearly stated.

9) Since 1946, Argentina, after having reached an advanced stage of development, has been affected by a process of acute inflation. Its planning cannot ignore the definite, short-range issues without which the determination of middle- and long-range goals and objectives through aggregative planning would merely result in a series of theoretical abstractions with no possibility of fulfillment.

Development Requires Active Indicative Planning

Notwithstanding the above considerations, I believe that "active" planning represents a valuable instrument for the attainment of better results in economic and social development. Nevertheless, we should dispel the myth, seemingly still alive in some Latin American countries, that the mere formulation of a development plan suffices in itself to solve existing problems. Also, during the periods with no development plans, when attempts were only made to carry out stabilization programs, their failure could also be ascribed to neglecting certain basic development issues, notably the lack of adequate orientation of investments. In the automobile industry, for instance, available resources were directed in too incoherent a manner towards developing expansion, thus subtracting a huge volume of resources from other, very important sectors of economic activity.

In conclusion, it is my opinion that planning methods must be changed in order to transform them into valuable instruments of economic policy. Instead of being formulated "from the top down," they ought to be prepared with the participation of all economic and social sectors of the country. Comprehensive planning is necessary, but it must be of the "indicative and active type," with the full participation of business sectors and of the trade unions.

At the same time, this indicative and active planning must be matched by the preparation of concrete projects because, in short, the coordination of such projects will determine the success or failure of the development plan. Given the particular conditions of the Argentine economy, it should be possible to rely on such a type of planning, with the proviso, however, that it neither is, nor can be, a substitute for the monetary, fiscal, income, and other policies to be adopted in order to face the most pressing problem, that is, the long and acute inflation process.

PLANNING IN THAILAND: IMPORTANCE OF POLITICAL DETERMINATION

Prayad Buranasiri
Snoh Unakul

[From "Obstacles to Effective Planning Encountered in the Thai Planning Experience," The Philippine Economic Journal, The Philippine Economic Society, Quezon City, Volume IV, Number 2, Second Semester 1965, US$ 1.50, pp. 335-340. The papers in this issue were presented to a Conference on Economic Planning in Southeast Asia at the East-West Center, Honolulu, Hawaii, 1-5 February 1965.]

This is a reprint of a part of the paper.

Refining Thailand's planning process is a difficult task impeded by a number of basic problems for which there are no easy solutions. First of all, planning methods and procedures constitute relatively novel concepts for the Thai authorities and people. It inevitably takes time before the new ideas and practices can be adequately assimilated and adopted. Moreover, the planning tools and agents, such as statistical data, suitable institutions, and trained administrators, are not yet sufficiently available in a relatively underdeveloped country like Thailand, and time is needed to develop them. Finally, in Thailand, there is a special problem confronting development planners -- the absence of a sense of urgency for accelerating economic development

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through concerted public efforts. Comparative stability, the relative abundance of even critical economic resources, and a high degree of social and economic mobility all tend to minimize the pressure for planned allocation of economic resources.

Favorable Factors

Thailand is by no means a wealthy country, but it is relatively generously endowed when compared with most underdeveloped countries. It has been possible to achieve a satisfactory growth rate while maintaining a remarkable degree of stability, even without formal development planning prior to 1961. Thailand enjoys a high degree of internal harmony and stability for, unlike most underdeveloped countries, it has never been subject to colonial rule and, therefore, has not known the tension which the colonial system generates. Moreover, the predominant parts of the Thai population speak the same language, belong to the same religion, and owe allegiance to the same king. Thai tradition and culture do not present any significant barriers to social mobility -- either vertically or horizontally. Thus, there is a high degree of national unity.

The fact that the Thai Government bases its policy on pragmatic rather than strong ideological or emotional grounds is of importance. The Government has shown a considerable amount of flexibility and ability to adjust to adverse experiences. For example, when faced with failures caused by mismanagement of certain state enterprises which had been set up initially to promote industrialization, the Government revised its policy. It decided instead to limit the number of state industrial enterprises and confine the activities of the public sector primarily to the maintenance of a favorable investment climate and the provision of the basic infrastructure facilities. Being responsible for these functions, alone, necessitated the utmost effort on the part of the Government.

Finally, another significant factor contributing to Thailand's stability is the relatively favorable ratio of population to resources. The country's food surplus can be exchanged for essential imported goods. Because most farmers own their own land, there is, as yet, neither a problem of landless peasants nor a pressing need for land reform, as in many underdeveloped countries.

Thailand's national income has been rising substantially without too much strain or effort. The average annual rate of growth in real national income over the last decade is estimated at around 5 percent. This was achieved even though the economy experienced certain depressive events, such as the decline in primary export prices between 1953 and 1957 and the comparatively large drop in agricultural production in 1957-58.

Meanwhile, increasing crop diversification has substantially altered the structure of production and exports in the economy in a short period of time. Production of the traditional products, such as rice and rubber, has continued to expand, while agricultural output has become more diversified as several "secondary" crops, such as maize, cassava, and kenaf, have enlarged their shares in total production and exports. Local private capital and initiative, augmented by the inflow of complementary foreign resources, have increased the tempo of industrialization within the country. Supported by expanded governmental activities, particularly in the provision of basis infrastructure facilities, the average annual rate of growth in real national income has increased to about 6 percent during 1961-65.

Problems

Thus, several favorable factors have made it possible for Thailand to achieve a satisfactory rate of growth and maintain a remarkable degree of stability for a number of years. Nevertheless, Thailand is confronted with several basic problems which may become increasingly acute unless adequate corrective measures are taken.

One of the basic problems is that Thailand's rate of population growth has been increasing rapidly. Should the current rate of over 3 percent per annum persist, it is predicted that Thailand's population will number 50 million by 1980 as compared to its present population of 30 million. The rapid rate of growth in population and the accompanying increase in the dependency ratio will aggravate the existing basic problems. While consumption, educational needs, and employment opportunities must be expected to expand rapidly, it will be increasingly difficult to raise adequate savings to finance the required investment.

On the supply side, production of goods and services in Thailand is handicapped by a low level of productivity and an inefficient marketing and transport system. Consequently, yields are relatively low, production costs are higher, and there is undue wastage. The problem of low productivity is aggravated by the depletion of existing natural resources through prolonged exploitation. Thus, there is an urgent need for the Government to expand and strengthen its program for improving productivity, particularly in the conservation and rehabilitation of natural resources, the provision of infrastructure facilities, research and extension services, and managerial and technical training.

Although the overall growth rate of the Thai economy has been satisfactory, development has been somewhat uneven. Much of Thailand's wealth and prosperity is concentrated in the capital city

of Bangkok. This means that the bulk of the nation's 30 million people are not sharing equally in Thailand's economic progress, and this disparity raises the potential danger of subversion in certain regions of the country, particularly in the north-east border provinces.

Increasing Need for Effective Planning

Taking into consideration the basic economic problems just cited, it is clear that even to maintain the relatively high per capita income growth rate of the past, Thailand will have to increase the efficiency of capital use, intensify its efforts to mobilize resources, and allocate investment resources more judiciously than it has in the past. In view of the criticalness of the current political situation in Southeast Asia, Thailand should not be content with the present relatively high rate of growth, but should further strengthen her economy while there is time to prepare for actual or potential threats from abroad. Therefore, it is essential that Thailand exert all efforts to accelerate her growth rate and to insure that the benefits of economic progress are widely enjoyed by the population.

An organized national effort in some form of national planning for economic and social development is needed, it would seem, to accomplish the tasks of accelerating the growth rate and distributing the increased income on a broader basis. Officially, the Thai Government is committed to development planning and has been taking steps to improve the planning process. Yet, progress has been painfully slow. The fundamental problem in Thailand is the lack of a sense of urgency in regard to planning. As a consequence, there is a "recognition lag" -- in other words, a failure to recognize the immediate need for planning to cope with the emerging problems that are likely to become serious in the future. In practice, there is only a partial Government commitment to planning, and popular support and involvement in the planning process is lacking.

It is obvious that, without a strong and enlightened political leadership wholeheartedly committed to its course and without meaningful public and private participation, development planning cannot become a truly viable and effective process. Planning authorities require a clear sense of direction and an organized, disciplined approach if they are to maximize benefits for the economy as a whole. These necessary patterns of behavior are, in many senses, alien to the individualistic Thai culture and tradition and, in some instances, may not be immediately politically feasible.

In spite of technical planning problems and institutional problems, the National Economic Development Board (NEDB) has been able to accomplish significant results. The planning efforts have helped to inculcate a planning outlook among government officials most closely responsible for the formulation and implementation of the development programs. In particular, this has gradually induced a tendency toward more interdepartmental coordination, an essential institutional prerequisite for improved planning activities. The very existence of the Plan has served to increase both public and official awareness of national economic problems and Thailand's potential for economic development. The NEDB's screening procedure has successfully eliminated a number of dubious projects which were economically unjustifiable. The occasional practice of bypassing the NEDB by presenting the projects immediately to the Cabinet for approval has been virtually terminated under the present Government. Finally, the NEDB's direct relationship with the top policy-making bodies has been established through regular personal briefings with the Prime Minister and through representation at Cabinet meetings.

Whether the increased effectiveness of development planning in Thailand proves to be long-lasting or short-lived will, in the final analysis, depend on the disposition and attitudes of future political leaderships. The NEDB, however, could influence the outcome considerably if it continues to maintain a high standard of integrity and if it further strengthens its own capability by strengthening its staff and by rationalizing its organization and procedures.

PLANNING IN THE PHILIPPINES: BUREAUCRACY AND LIBERALISM

Armand V. Fabella

[From "Problems of Plan Implementation," The Philippine Economic Journal, Philippine Economic Society, Quezon City, Volume IV, Number 2, Second Semester 1965, US$ 1.50, pp. 341-354. The papers in this issue were presented to a Conference on Economic Planning in Southeast Asia at the East-West Center, Honolulu, 1-5 February 1965.]

These are excerpts from the article.

Early in 1962, the Republic of the Philippines embarked on a rather uncommon venture: a conscious attempt to launch an ambitious program of economic development under an almost religious adherence to free enterprise and with full and unhindered convertibility of its currency. The venture followed a substantial de facto devaluation after more than a decade of exchange and import controls. It has faced many and varied problems, but its progress, if uneven at times, has been continuing and substantial.

Historical Perspective

Since the end of World War II, there have been a goodly number of Philippine planning documents prepared by various sources -- almost all of them ambitious in their targets and objectives but hardly any going beyond sectoral aspirations and potentials. These plans indicated what rates of growth were feasible and, in a general way, what policies

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were appropriate to secure these targets. There was not serious attempt, however, to break down targets into related, meaningful programs and specific projects.

The earlier "plans" were understandably crude and did not go much beyond indicating the more urgent problems of the economy. During the 1950s, somewhat more sophisticated development programs were presented by the National Economic Council (NEC). The widespread failure to implement national economic plans led to the reorganization of the National Economic Council, but this did not prove to be an effective solution to the problems of plan implementation.

Early in 1957, the Budget Commission was authorized to formulate integrated plans of long-term development finances. As a result, it superseded, for all practical purposes, the planning and implementing functions of the NEC, since the general and other funds released through the Budget Commission constituted the major portion of the financial resources available to the government for economic development expenditures.

These annual budget documents, which began in Fiscal Year 1958 when the first of a series of five-year fiscal programs was presented by the Budget Commission, probably came closest to bridging the gaps between overall targets, sectoral programs, and specific projects. It is true that these fiscal programs referred merely to the allocation of resources available to the national government and that, relatively, these formed a minor segment of total national investment (less than 20 percent). However, such an approach indicated the growing awareness of the relationships between the activities of the government and its implications for the economy.

The latest planning document is the Five-Year Socio-Economic Program, submitted early in 1962. It was similar to earlier documents in being primarily a presentation of growth potential and the steps that could be taken to attain target rates of growth. However, it was unique in two basic ways. Firstly, the Socio-Economic Program had the full support and encouragement of the Chief Executive; indeed, it was prepared at his behest. Secondly, whereas previous plans had relied heavily upon foreign exchange and import controls for the allocation of resources, the Program was formulated precisely at a time when foreign exchange restrictions had been virtually terminated. The Program therefore laid much greater stress upon the effective use of alternative policy tools, including monetary, fiscal, and commercial policies -- weapons which had been relatively neglected heretofore.

Public-Private Coordination

This decision to terminate foreign-exchange restrictions in early 1962 was not without its costs, however. The government, in a sense, voluntarily surrendered one of its most powerful direct tools for the allocation of resources. It limited its power to influence directly the economic decisions of private business which bear on growth and development. This economic philosophy manifested itself in the government's decision to transfer ultimately into private hands all government corporations of a proprietary nature and to desist from any economic activity which would result in competition with private business.

The scope of government action in the economic sphere was limited further, later on, by a political development which had far-reaching economic repercussions. Unhappily, it soon became apparent that no general reorganization of the governmental machinery for more effective economic planning was possible. Legislative measures designed to streamline the revenue-collecting bodies of the government were not passed by the legislature; new tax measures needed for heavy government investment requirements of the Socio-Economic Program had no greater success.

As a consequence, the government, understandably cautious in the light of full convertibility of the currency, had to spend short of its plans. The situation, therefore, did not permit the government to undertake successfully all the administrative and legislative steps that would have maximized the chances of success for the Socio-Economic Program.

It was under these circumstances that the Program Implementation Agency (PIA) was organized in August 1962. If planned and executed in combination, both private and public projects can result in far greater returns than the sum of the benefits of each project taken as a unit. What was needed was a clearing house where public and private projects could be systematically coordinated, in the manner of industrial complexes.

This clearing operation involved three aspects. First, the national targets set up by the National Economic Council had to be broken into complementary project packages. Second, the projects drawn up by different government departments had to be integrated and coordinated. Third, a clearing house had to be provided to which private investors could bring their projects and see how these could be integrated with public projects. These operations enabled PIA to prescribe appropriate incentive policies and remove administrative bottlenecks to necessary investment.

The Progress of Plan Implementation

The new Program Implementation Agency was tossed into a modified administrative routine for allocating government economic resources; for better or for worse, papers relating to all the important investment decisions of the Philippine government arrived at the desk of the PIA Director-General. These papers emanated from several hundred government and private entities and generally demanded immediate processing. The innumerable signatures one affixed in almost blind faith in the ability of one's staff were numbing (and daily evidence that a lot of work seemed to be getting done). Merely to keep up with the existing routine was strenuous enough; attempting to change it was inviting a heart attack.

The changes that did take place fell into three broad categories:

1) The allocation of those investible resources under the government's direct control. This control was most effectively exercised over direct government capital expenditures and over the investible funds of government financial institutions that were earmarked for transfer to the private sector.

Perhaps the most significant accomplishment of the PIA was its influence on the annual budgetary process. Whereas the previous five-year fiscal programs were evolved independently of previous development programs (although both were presumably updated annually and concurrently), beginning with Fiscal Year 1963, the national budgets were made consistent with the framework of the Socio-Economic Program. Thus, from the very beginning of the budget cycle, the level and composition of government expenditures in broad terms were directed in line with economic development purposes. To a large extent, this close coordination between the Budget Commission and PIA was made possible not only by the close physical proximity of the two agencies but also by the close informal relationships between the heads of these agencies and their respective staffs.

For instance, overall ceilings for current operating expenditures and capital outlay were decided in close consultation between these agencies considering projections of revenue collections by the Bureau of Internal Revenue and the Bureau of Customs, the desired level of international reserves and prices, and the overall outlook in economic activity in the next fiscal period.

As a second aspect, the predominance of government-controlled financial institutions in the Philippine financial market had become the government's sole direct means of influencing the individual decisions of entrepreneurs. Government policy found an effective

forum in loan negotiations between entrepreneurs and government-controlled financial institutions; and this forum became even more effective as measures, such as the adoption of one common set of loan and investment criteria for these institutions, were taken. Thus, government economic policy could be effectively communicated to private entrepreneurs.

Another step forward has been the attempt, not altogether successful as yet, to place greater emphasis upon project feasibility and viability of loan application instead of the purely collateral approach as in the past.

Similarly, PIA arranged regular monthly planning sessions among the ranking staff members of the Central Bank, the Treasury, and the Budget Commission in order to make possible consistent monetary and fiscal policies. This involved keeping close track of the internal monetary balance of payments and the Central Bank's net domestic assets, the careful programming of government fund releases, and the determination of those areas where further leverage from the Office of the President was necessary to secure the goals of the Socio-Economic Program, especially with regard to price and exchange stability.

2) The initiation or active promotion of key projects involving coordination between different government and private entities. The lack of government revenue in 1963 restricted the scope of PIA's activities in project development. Resources of the required size and powers of the required strength were just not available.

3) Initiation and coordination of government policy in support of stated goals of the Program. The iron and steel industry program represented one of the first attempts to coordinate, forecast, and implement, in anticipation of expected development of an integrated iron and steel industry in the Philippines. The extent of government influence on this industry may be gleaned, a) from the fact that negotiations were conducted (with an American financial institution in one case, and with a German bank in the other) with PIA representatives actively participating, b) from the concurrent development of a crash training program for metallurgical engineers and for lower-level technicians, and c) from the establishment of a metallurgical institute for the necessary supporting research and training facilities.

Plan Implementation: Evaluation and Prospects

How well one thinks Philippine plan implementation has been going naturally depends on one's standards for judging the success of plan implementation.

Until such time as each key agency in the government is adequately staffed with technically trained personnel, PIA will continue to be involved in such diverse matters as reorganizing the railway system, analyzing the economic effects and consequences of importing rice to meet a shortage, agitating for legislative clarification of foreign investment, and so forth. There is a growing awareness of this need for such an administrative infrastructure, and planning and programming units will be established in key government departments.

The process of building an administrative infrastructure in government is long and painful; the costs, especially the noneconomic costs, are great, for a whole way of life is often involved. Nepotism must be replaced by efficiency, political appointees by professional technicians, the interests of family or a region by those of a nation. The task of constructing this administrative infrastructure in the Philippines is far from finished. But the work has started.

A number of obvious tasks also remain for the next few years. A major handicap has been the lack of sound basic data. A second task is the concentration of direct government investment in areas in which it will have the largest immediate results, i.e., infrastructural and agricultural projects. Agriculture, in particular, has been somewhat neglected by Philippine development planners, who may have concentrated on the admittedly more glamorous goal of expanding industrial production. But, agriculture has remained of primary importance, not only for economic welfare, but in providing the export base for industrial growth.

On the whole, however, the most important task is still the improvement of the government machinery for planning and implementing economic programs. It is in this area that the advances won must be consolidated, and that much remains to be done.

A NOTE ON COMMUNICATION IN ECONOMIC DEVELOPMENT

S. C. Dube

[From a paper prepared for the East-West Center Seminar on Communication and Innovation in Development Policy, 17 August - 11 September 1964, Honolulu.]

These are excerpts from the paper.

Recent experiments in planned change in the developing nations have brought out the critical significance of communication in the strategy for the successful implementation of the programmes of economic development and technological change. A series of costly and avoidable failures has shown the planner that even well-conceived projects of modernization fail to register with the people and to produce the desired results unless they are supported by an imaginative, adequate, and effective communications programme. Communication is thus gradually coming to be recognized as a key factor in the process of directed change; this recognition, in its wake, has led to more systematic and organized efforts at the formulation of communications policies.

The full import of the dynamic possibilities of communication for programmes of modernization,

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however, has not yet been adequately comprehended. In many countries, the communications policy tends to be time-bound and target-oriented. Communications media are utilized, largely, to impart information with a view to increasing awareness of and arousing interest in specific innovations, to exhort the masses to adopt recommended practices and attitudes, and, also, to a limited extent, to teach them particular skills and techniques. When they are imaginatively planned and executed, such efforts often succeed, at least partially, in achieving their limited objectives. But, by adopting such a narrow perspective towards communication, a country cannot fully exploit its potential for building the social and psychological infrastructures of modernization.

In other words, the importance of commun' .tion as a valuable social overhead is as yet not sufficiently recog zed: it is not being systematically used either to build the desire mages (images of life as subject to deliberate change, of the possibility of economic growth, of what it is to be cultured and educated, and of the modernized portion of the world) or to inculcate desired attitudes and attributes (empathy, high aspirational level combined with energy and discipline, strong secular aspirations, computing strategies on a broad stage, means-ends considerations uninhibited by custom, emphasis on functional rather than on ascribed roles, increased reliance on organized voluntary associations, and achievement motivation). Communications media are not being effectively utilized either to build a climate for change or to inculcate in the individuals a will to work for change and the attitudes without which sustained growth is not possible.

Deficient Programmes

Communications policies and programmes of the developing countries, in most cases, are not sufficiently comprehensive. Unidirectional flow of communication from the planner and the agent of change to the rural masses is perhaps the best organized. Little conscious effort, it appears, is made to take account of communicational inadequacies in other spheres. A feedback mechanism -- communication from the masses to the planner -- is not so well developed. Problems of communication, within the main developmental agency and with and within subsidiary agencies, are largely neglected. Problems of communication between the planner and the political decision-maker, between the general administrator and the technical expert, and between the planners and development administrators at different levels have, at best, been only vaguely identified. Communication between the planning sector and the research sector, where the two exist, is rarely smooth and effective. Communication between the administrative and the research sectors is the same. Proper channels of horizontal and vertical

communication between new political and administrative institutions, created especially for the efficient implementation of the development programmes, do not appear to have been provided.

Even where some forethought was given to this problem, the persistence and the strength of possible blocks to communication were not correctly anticipated. Many developing nations depend upon foreign aid -- both financial and technical -- for the implementation of their development plans, but communication between aid-giving and aid-receiving nations is often blocked by misunderstanding, suspicion, and distrust. Overseas consultants and advisers too find it difficult to communicate easily and effectively with their native counterparts.

Three Obstacles to Developing an Effective Communications Network

Three important handicaps to the development of an effective communications network in the developing countries merit careful analysis.

First, there persists a considerable gap between the small modernizing elite and the large mass of tradition-bound people. In some developing countries, the modernizers are outnumbered by the conservative, traditional elite; in many, the latter may not be overtly strong, but its power to upset the position of the modernizers in a crisis cannot be underrated. Distance between the modernizing and the rural elites, and between them and the masses, is very considerable indeed. In many respects, they continue to live in separate cultural worlds. Differences in ethos and thought-ways create barriers in communication between them. Ways and means for overcoming these barriers have not yet been found.

Secondly, the traditional communications networks in these countries are still strong; and the modern media of mass communication are poorly developed. A high rate of illiteracy precludes the wide use of books, magazines, and newspapers as instruments of communication. To the poor, the wireless continues to remain a remote and unobtainable luxury. Community radio sets are few, and the number of those who can take advantage of them is, of necessity, small. Television is beyond the financial capacity of most of these societies; its use is largely symbolic. It is often an ostentatious mark of modernization, and is intended more to impress the outside world than to communicate. The use of these three principal media of mass communication is confined thus largely to the elite. In consequence, other media of communication, limited in reach and penetration, have to be pressed into service to put across innovations to the masses. Even these efforts, in most of the underdeveloped countries, are still experimental.

Thirdly, there is very little scientific knowledge regarding the communications situation in the underdeveloped countries. Traditional channels of communication in these societies have not been clearly identified, nor is there much scientific information on the "opinion leaders" who have a seminal role in the dissemination of ideas and adoption of new practices. Even with respect to the mass media, little is known about penetration and influence. Experiments in mass communication are largely hit and run, trial and error ventures. Modern communications research is still in its infancy; lack of encouragements, recognition, and financial support have prevented it from gaining strength and momentum.

The consequence of this refusal to make the necessary inputs in scientific communications research are obvious: formulators of communications policy have to continue to grope in the dark. Non-availability of technical personnel to undertake such studies complicates the situation still further. In most of these countries, there is no backlog of experience on the mechanics and strategy of change-producing communication. A body of specialists who can innovately handle communications media in the tasks of nation-building has yet to emerge.

Other Practical Considerations

The developing countries do not have a very clear image of modernity. Nostalgia for the past powerfully pulls them back towards tradition. Many of these countries have acquired national independence through struggles that were intensely anti-Western. Hatred for Western domination was accompanied invariably by antipathy for things Western. Revival of native traditions -- historical or mythical -- was an important objective of their struggle for the achievement of national independence. The self-image of many new nations still has anti-Western and nativistic overtones. Even their elite does not clearly know how, ultimately, the elements of tradition and modernity are to be synthesized in the emerging national pattern.

In the absence of a consensus regarding elements of tradition to be discarded, the modernizing elite cannot pursue its aims vigorously; strongholds of conservatism and orthodoxy can use the apparatus of democracy to upset the tenuous balance of power and unseat the modernizers from their positions in the government. Effects of large-scale use of mass communication are not known, nor can they be predicted with any accuracy. Its use might mean unleashing a tide whose course cannot be predicted and whose force cannot be contained. Caution in its use is, therefore, understandable.

The practical planner knows that, in the process of development, communication is only one of many factors. By itself, it cannot promote economic development and technical change; it has to be supported by services and supplies. In many minds, there is the fear, not wholly unfounded, that expectations aroused by communication can lead to disaffection if they are not matched by complementary services and supplies.

Given a democratic framework of government, the state cannot control all the media of communication. Even where it controls them, it has to use them with caution. No democratic government can ride rough-shod over popular sentiment. Communications media in private hands may tend to pull in different directions and work at cross purposes. This is admittedly a necessary part of the democratic process, but it can also confuse the people in a society not experienced in the ways of modern democracy. In the emotion-based politics of developing areas, it can often pose knotty and inconvenient problems. This observation does not imply that all communication should be "controlled" or "guided," for this would be the greatest hindrance to the growth of free interest groups or associations that are a prerequisite to the emergence of a genuine democratic order.

The answer seems to lie in working for the achievement of a democratic consensus in regard to the broad aims of planning and the methods to realize them. The attainment of this consensus is a slow and time-consuming process. Many developing nations lack problem-solving leadership and political security; some do not even have the requisite degree of discipline. This explains why some underdeveloped countries cannot resist the lure of authoritarianism, whatever qualifying democratic label they may give it, and the promise of quick results. The communications policy of some of the "guided" or "controlled" democracies has produced, on the whole, more words than economic development. Promises have been many and profuse, but their fulfillment is nowhere within sight.

Practical considerations impose severe limitations on the utilization of foreign expertise in the formulation and implementation of communications policies. While helping an underdeveloped country in its battle for modernization, it is feared that the foreign expert may simultaneously engage in a battle, on behalf of his own country, for the mind of the country he is assisting. This aspect of the problem may be exaggerated, but underdeveloped countries are extremely sensitive on this score.

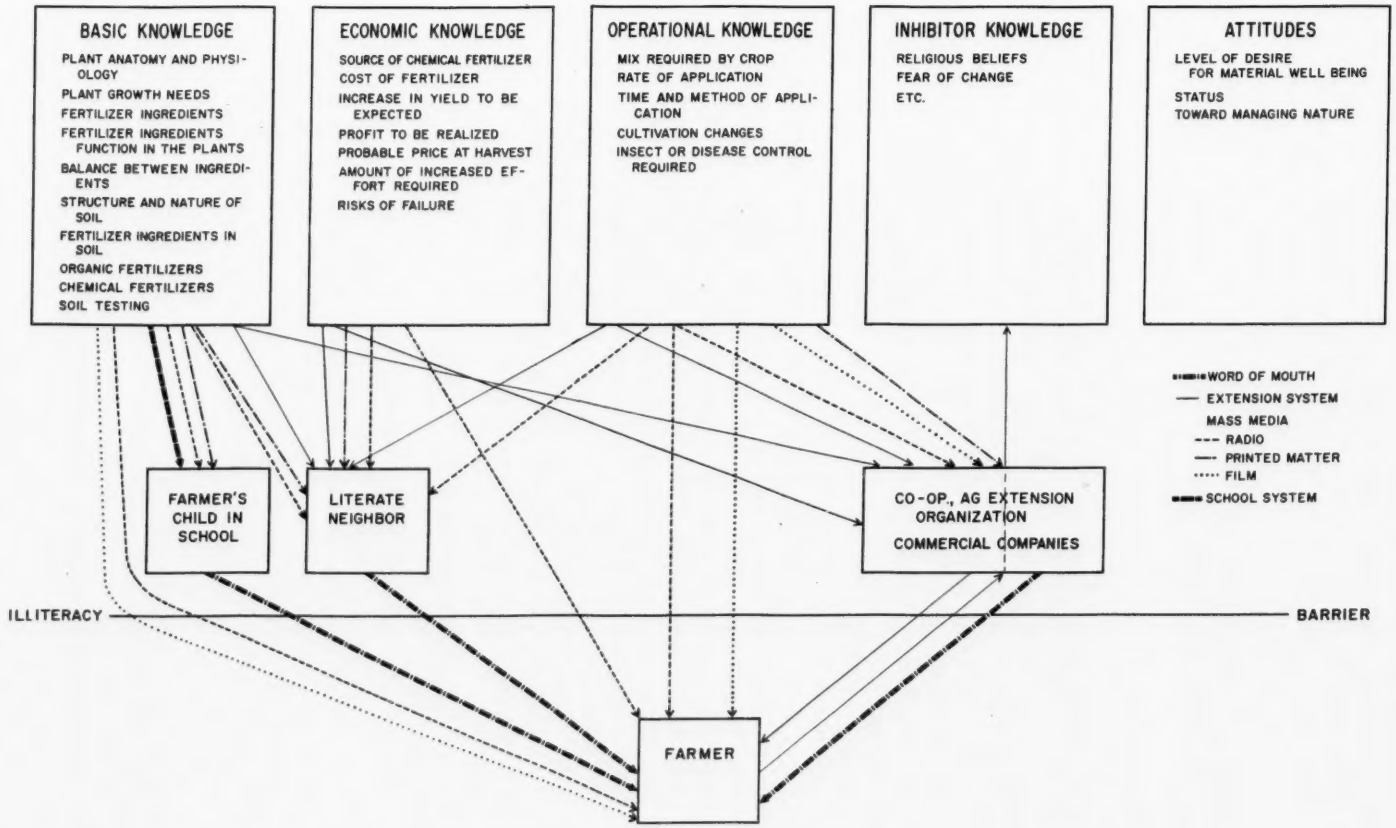
Thus, the possibilities of communication in programmes of nation-building are being increasingly recognized, but a multiplicity of factors -- some of them discussed above -- hinder their full utilization.

FACTORS INVOLVED IN COMMUNICATING RURAL CHANGE

Of course, development and communication are intimately related, but how can the planner use this knowledge? Suppose that he is trying to persuade farmers to use fertilizer. The chart at right shows communications factors which he should consider in trying to bring about this change. It was prepared by Gerald F. Winfield as a part of "An Overview of the Factors Involved in the Behavior Change Required for Rural Development in the Less Developed Countries," his presentation to the Agency for International Development-Michigan State University Symposium on Communication and Change, in East Lansing (Mich.), 4-7 April 1966. A report on the symposium will be published by Michigan State University entitled Communication and Socio-Economic Development. The author is Director of the Communications Resources Staff of the Agency for International Development.

FERTILIZER

KNOWLEDGE FACTORS



COMMUNICATION AND THE DEVELOPMENT PROCESS

Wilbur Schramm

[From Communications and Political Development, Lucian W. Pye (ed.), Princeton (N.J.), Princeton University Press, 1963, US$ 6.50, pp. 30-52. The papers in this volume were prepared for the Conference on Communication and Political Development held in Dobbs Ferry (N.Y.), 11-14 September 1961 and sponsored by the Social Science Research Council.]

These are excerpts from the book.

As nations move from traditional society toward modern industrial society, spectacular developments take place in their communication. From one point of view, developments in communication are brought about by the economic, social, and political evolution which is part of the national growth. From another viewpoint, however, they are among the chief makers and movers of that evolution. The purpose of this paper is to explore this interaction and seek a basis for understanding it.

Communication and Society

A small, organized group, such as a primitive tribe, would have to post watchmen to inform it of threats and opportunities (an enemy tribe approaching, a herd of buffalo within range of hunters). There would be a tribal council to decide what to do about the needs, goals, and policy. If

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all members of the tribe were not close together, there would doubtless be couriers to carry information and orders from the council. When necessary, someone would be appointed to carry a message to a neighboring tribe or negotiate or barter. The elders of the tribe would have to serve as custodians of the history, the customs, and the skills, and the elders or the parents would have to pass appropriate parts of such knowledge on to the young members of the group. The tribe would probably have a bard or other entertainer. In other words, the primitive tribe would institutionalize most of the communications behaviors of the individual.

In a South Asia village, at the present time, these functions are all being performed, and many of the same institutions will be found to exist. The chief differences come from the intrusion of higher systems and more developed communication. That is to say, the representatives of the state and national governments take part in the life of the village; the national goals become, in part, a determinant of local decisions; the national radio, the regional newspaper, the national information program, a bit of the national school system, the national and state roads, the bus, and travelers, all enter the village. The village is thus a more completely "open" system than the tribe would have been; and it is open to the forces of change which seep down from the national policy.

In the industrial state, these relatively simple roles have been taken over, for the most part, by complex organizations -- the news gathering machinery, scientific research, and other sophisticated sources of intelligence; the printed media, broadcasting, and film; the complex of schools, libraries, computers, and other devices for storing, retrieving, and imparting information; the machinery of government and public opinion; the apparatus for international communication through diplomacy, mass media, trade, and personal contact; the provisions for extending interpersonal communication through such multipliers as telephone, telegraph, recording, and postal service; and all the provisions for entertainment through the mass media and the large-scale organization of spectator sports. The rate and amount of communication are enormously increased, and the area of interconnection is greatly widened.

Yet if visitors from outer space are looking down on us from their space ships, they may see less difference between the early and the late patterns of social communication than we do. They will doubtless notice that the function of communication varies more in degree than in kind. At a later stage it is faster, more complex, more extensive, but essentially it does about the same thing. Whether in a modern state or a traditional one, it handles the business of society. It passes back and forth the danger signals of rising strain, the need signals, the opportunity signals of ways to satisfy needs, and the decision signals.

The structure of social communication reflects the structure and development of society. The size of the communications activity -- the development of the mass media and their audiences, the transfer of the individual communications roles of traditional society to organizations, the stretching out and multiplying of communications chains -- reflects the economic development of society. The ownership of communications facilities, the purposeful use of communication, the controls upon communication -- these reflect the political development and philosophy of society. The content of communication at any given time reflects the value pattern of society. The patterns of communications networks, which determine where information flows and who shares it with whom, reflect the homogeneity of culture and geography within a society. Of course, there are also personalities and idiosyncrasies in any communications system, but they can be considered a reflection of the larger patterns of society.

Communication and Development

Although economics and communication are both part of society and neither can develop to any great extent without a corresponding development in the other, still they act powerfully on one another. Society makes certain economic arrangements before it can do certain things with communication, and it must do certain things with communication before it can do certain things with economics.

For example, a more efficient communications system makes industrial development easier, and industrial development makes communications development easier. More and better newspapers provide more reason to learn to read, and higher literacy provides reason for having more and better newspapers. The more that people feel able to take part in political activities, the more they feel the need of education and information. The more information they get, the more they are interested in political developments. The more education they have, the more they seek information. The typical history of communications development in countries where it is farthest advanced is a chain of interactions in which education, industry, urbanization, national income, political participation, and the mass media have all gone forward together, stimulating each other.

In the social change we call "economic" development, development in one line can never get far in advance of development in the others.

Communication as Mover

Essentially, what happens in national economic development is that a more active national system is created. Relations that have

been dormant are awakened. Components that are largely self-centered become interrelated. There is an enormous increase in activity and productivity throughout the system. To bring about the conditions for development, there must be a great heightening of goals. Because these are widely discrepant from existing behavior, a painful amount of strain results. Just as communication has been employed to raise the goals, spread the news of them, and widen their acceptance, so now it is employed to raise the level of national accomplishment toward the goals. It is employed, with all the skill available to the leaders of national development, to manipulate and even out the level of strain. Strain must be painful enough to encourage activity, but not painful enough to discourage activity. This is, of course, what goes on in connection with "five-year" plans and other subsidiary campaigns with the grand effort.

In contributing to this manipulation of goals and strain, social communication does not work as the exclusive servant of any particular political philosophy. In a state that is developing along Marxist-Leninist lines, communication takes a form somewhat different from its form in a non-Leninist state, but this is because the entire society takes different form. Efficient communication is just as essential to development in China as in India, in Cuba as in Brazil, in Guinea as in Pakistan. There are surprisingly few differences among the ways it is used to speed development in these different states. Essentially they use it to perform the same varieties of tasks.

Communication must be so developed as to make for a greater effort in every way. Let me cite six of its essential functions.

1) Communications horizons must widen. There must be a growth of national loyalties and awareness, supplementing local loyalties and local awareness. Peoples of different cultures, different languages, different political and religious beliefs must come to realize their common interest and the usefulness of working together toward goals.

This realization involves a gradual widening of horizons from local matters and local concerns to national ones, a tremendous speeding up of information from distant places. In the traditional society, a village is self-contained. Its news is the gossip of the neighborhood. Its concerns are those of the families that live there. In the process of economic development, the neighborhood interest persists, but now must be related to the national interest. The man who had been chiefly a citizen of the village is now self-consciously a citizen of the nation.

But the citizen cannot extend his environment unless the communications system extends its environment. In the oral, traditional society the provisions for wide-horizon communication are inefficient: the traveler and the ballad singer come too seldom and know too little. A modernizing of society requires mass media, some of which must be national. The radio and a few newspapers must carry the news and viewpoint of the nation, and they must come into the village. When they do so, people will learn to read the print and acquire receivers for the radio. And when this happens, the local communications systems -- the coffee house, the bazaar, the casual conversation, the local government, the local newspaper if there is one -- will also concern themselves with national matters. If there is adequate leadership, the sense of nationness will grow.

2) Communication must be used as the voice of national planning. An enormous effort is required of the people of a developing nation. They must learn new skills, new ways of living. Their labor must help provide the necessary capital. They must be willing to defer gratifications until the nation as a whole can afford them. Above all, they must understand why they are making this effort and feel that they have a part in determining what shall be done.

In part, this requires only that efficient national media feed the local communications systems. These media must communicate widely to the entire country the agreed-upon goals, the national decisions, and the reports of progress. Otherwise, efficient national effort is impossible.

But more than that is required. Increasingly, to maintain a sense of participating, there must be two-way communication. There must be a channel by which the needs, concerns, and achievements of a local community can be communicated upward and outward. This does not happen by accident. The political system, if it is to carry such information, must make efforts to get reports from its local representatives. The newspapers, if they are to carry local materials, must have an arrangement for local correspondents. Ultimately, there must be a national news service to gather news systematically and to share it with the rest of the country. There must be avenues for criticism of policies and practices, both locally and nationally. This means meetings, officials to act on complaints, opportunities to "write to the editor," opportunities to have discussion and debate.

3) Communication must be used to help teach the necessary skills. It must help teach literacy so that citizens can participate broadly and efficiently. It must help teach technical specialties of all sorts so that technology can go forward. In particular, it must

help teach the skills needed for agricultural production so that a sufficient proportion of the population may be freed from agriculture to live in the cities and work in industry, and so that hunger can be banished as an enemy of national progress.

This is perhaps the point at which communication can make its greatest contribution to national growth. All forms and channels of communication are required. There must be textbooks for schools; films, radio, and print for community education; organized group and individual instruction to supplement the media. There must be facilities to produce these materials, and a program to put them into use.

The basic skill to be taught is literacy. Without this no nation can expect to have sufficiently wide political participation or a sufficient number of technically trained workers. But so versatile are the audio-visual media that they can leap over the barrier of illiteracy and, even before the adults learn to read, teach some of the technical knowledge and political awareness they must have. A tough battery radio selling for about five dollars would open the doors of millions of homes in developing countries to news and information long before the literacy program reaches those same homes. A workable sunlight projector would carry technical information into many communities where neither electricity nor literacy have penetrated. Educational television and films can teach, without the aid of print, if they can reach into a community. It is not necessary, therefore, to wait on the extension of literacy before elementary technical skills, and in particular, agricultural skills and hygienic practices, are shared with nonliterates.

4) Communication must be used to help extend the effective market. If most people are to live and work in the cities, if there is to be national industry, and if the country is to build its foreign trade, obviously there must be communication directed to these ends. Here, the developing countries can avoid some of the mistakes made by the developed ones and can adapt some of their more effective procedures in commercial communication. Development must include widespread extension of telephones and telegraph, adequate postal service, and transportation.

5) Communication must be used to help prepare people for their new parts in the national plan. In a developing country, the eyes of communication are forever on the future. Future orientation has two very important effects. For one thing, it stimulates people to greater efforts and strengths them to endure hardships, which are seen as temporary, but necessary, preludes to a better day. In the second place, it actually prepares them for new roles, new responsibilities, and new problems. This it does by reporting

constantly on national plans and national achievements, on the experiences of other states that are industrializing, and on the national "heroes" who are to be emulated.

A large proportion of mass-media time and space in developing countries is therefore used for such a combination of reporting and exhorting. Many developing countries have found it desirable also to develop a large corps of trained agitators for the same purpose.

6) Communication must be used to prepare the people to play their international role. The process of economic development inevitably requires that horizons be widened from local to national and thence to international events. Partly, this is a consequence of expanding trade and growing national importance. Partly, and all too often, it is because the developing country finds it convenient to stimulate loyalties and work efforts, to excuse deprivations, and to displace hostilities by finding an international scapegoat. Thus, the Soviet Union found it helpful during the years of Soviet development to fear the Western countries, Poland finds it convenient to fear Germany, Egypt to fear Israel, Cuba to fear the United States, and so on. In any case, the media are required to report on the rest of the world.

Economics as Mover

As economic activity spreads throughout the system, the act of balancing and sharing the strain becomes more delicate; it requires quicker reports from farther away and quicker orders to more scattered centers. Components must be in touch. The same kind of understanding, the same bases for cooperation, which have existed among a few must be made to exist among many.

A considerable amount of the system's capital must therefore be devoted to maintaining the growth rate of communication at no less than the growth rate envisioned for the whole system. New and longer channels of communication must be created. New and more efficient devices must be developed to gather information, store it, and share it. New skills must be developed among communicators and among users of communication. Such growth obviously requires substantial support and organization.

The requirement of a mass communications system, of course, does not necessarily mean that every home must have a radio and be reached by a daily newspaper. These are later goals.

A catalogue of inputs. In any case, widespread mass-media developments require such large-scale supporting developments as the following:

printing machinery -- typesetting equipment, presses, photo-engravers, and all the other equipment of the composing and printing rooms;

broadcasting equipment -- transmitters, studio equipment, recorders, towers and antennas, and all the other necessities of modern broadcasting;

projectors, cameras, and studios where films can be made;

a supply of electrical power;

a supply of newsprint;

a supply of film;

a source of foreign news and a means of exchanging news within the nation;

a source of programs and another of films;

a book and magazine publishing capability;

at least the rudiments of a telecommunications network whereby to exchange programs and point-to-point communication;

a supply of receiving sets, and either the facilities to build them or a feasible way of importing them;

expert managerial personnel for all the media;

trained professional personnel -- editors and news handlers, producers and script writers, film makers, and the like;

trained technical workers -- printers, compositors, pressmen, engineers, broadcast and film technicians, and projector operators; and

personnel trained to repair and maintain all this equipment.

The schools, the literacy training, and the community education, no matter how modest they may be in physical appearance, will require supporting activity of an even higher order. For example:

school buildings, which at first may be makeshift but soon will require a great deal of new construction;

textbooks, together with people to write them and facilities to print them;

teaching and laboratory equipment, which will range from slates and blackboards in the early grades to elaborate mechanical and electronic equipment in the technical training program;

supporting media: reading material for new literates and technical trainees, teaching films, film strips, and projectors, sound recordings, ultimately programmed self-instruction and television. The fewer the skilled teachers, the more necessary these become;

a high degree of organization, including the equivalent of a large agricultural extension service, a nation-wide literacy teaching program, and a technical training program that makes use whenever possible of on-the-job training;

skilled managerial personnel, including school administrators, adult education administrators, and generalists able to coordinate the several branches of the program;

trained teachers for the schools, the colleges, the literacy program, and the community and technical training programs; and, consequently,

schools or programs for training teachers;

maintenance and repair personnel for buildings and equipment; and

a large number of volunteers and semi-professionals to augment the short supply of trained teachers.

These lists are suggestion rather than exhaustive. No attempt has been made to put a monetary figure opposite any of the items, although it is obvious that they represent a very large outlay. Obviously, to take, in a few decades, the steps in communication required of a developing country requires national sacrifice, a willingness to allocate scarce commodities to communication rather than elsewhere, and a major national effort in self-improvement.

The nature and degree of the difficulties of financing communication vary with the media as well as with the political system. Printed media require literacy and urbanization. Radio and movies skip the requirement of literacy, and radio, at least, avoids the requirement of urbanization. All the media require skilled personnel, but different kinds. Print requires writers, editors, and printers. Radio requires a small number of program and managerial personnel, station engineers and technicians, and a widespread capability for maintenance of receiving sets. Schools require a very large number of skilled teachers.

Education is communication. We have chosen to talk about the schools along with the mass media for a specific reason. Whereas the problems of education and information tend to be separated in an advanced country, in a developing nation they are connected. The mass media must carry the main burden of informing and teaching the public for a long time before an adequate school system can do its part. The planning for mass media therefore gears into the planning for schools and technical training. In a developing country, the use of mass media as teacher multipliers assumes an importance it does not have in an advanced nation. Thus, the economic strategy of communications development in a developing nation is not separable into a strategy for education and a strategy for information; it must be one strategy.

Problems of strategies. Ideally, the strategy is to depend on the different channels at the stage of national development where they provide the largest returns in proportion to their cost and to other capabilities. When literacy is low, radio recommends itself. For a few dollars, a radio can be put into a village and that village connected, in a way it has never been, to the national effort. For a few tens of thousands of dollars, a radio station can be erected to serve thousands of villages. When literacy begins to rise, a foresighted government will encourage the growth of printed media to supply the new literates and keep them in the reading audience. When teachers are in short supply, a wise government will use teacher multipliers, such as teaching films, educational television, and the newest and, in some respects, most promising of all the multipliers: programmed self-instruction.

It will do these things, that is to say, if it can. The typical country entering into a transitional stage of development feels itself caught up in a circle of needs it has no way to break out of. For a million dollars, it could do a considerable job with radio, but the million is needed for schools, and only one-third of that is available because industrial and agricultural training are needed more. If newspapers were plentiful and people could read them, much of the agricultural information might be carried by them; but newspapers are few and starving, and literates are few and poor. The point is that there is no single action by which a developing country can break out of this trap. A new teacher-training college will not do it, nor will a television station, nor subsidized newsprint. The economics of development require that a nation pull itself up painfully, inch by inch, by its own bootstraps. Communications development cannot far outstrip other developments.

Some strategies are better than others, as we have indicated. It is safe to say that the optimum strategy has not yet been tried. What would happen, for example, if a developing country were to stop trying to build to an old blueprint and look at the media and

educational channels with new eyes? There is no reason why these new countries should go through all the steps which older countries have taken, or make the mistakes which older countries have made.

Each country obviously has to find teacher multipliers. It takes a long time to train an adequate corps of teachers in a developing country. But several kinds of multipliers are available. One of these is educational television. In a developing country, a television set in each village could constitute a whole school. A second multiplier is programmed self-instruction. It might well save years in the process of economic development by giving the people a device by which to teach themselves the skills and information they most need. Finally, there is the teacher multiplier we know as volunteer or semi-skilled help. There is no reason why people who have learned to read should not -- with the help of television or radio or films -- help others learn to read; or why, with the help of programmed self-instruction, laymen should not help other laymen learn skills; or why, with the help of these new devices, persons who have a little education should not shoulder much of the burden of teaching the very young.

There is another multiplier of teaching efforts that seems promising. Inasmuch as a developing country has an educational task that is village-wide, could it not so organize its program? Is there really anything to be gained by fragmenting the activity: one organization to teach the children, another to teach adults to read, another to instruct the farmers, and so on? Why not, in the period of rapid development, consider the possibilities of planning the program for the whole village so that one part of it helps another, and so that the responsibility is centered?

It is exciting to think what a country might do if it would thus consider communication anew. The task of building a communications system is a heavy economic burden, slow and dependent on the general economic growth of the nation. All the more reason, then, to apply some imaginative strategy, using the new teaching devices and a maximum of lay helpers, in whatever organization will best do the job.

DOCUMENTARY FILMS FOR DEVELOPMENT

Tulsi Bhatia Saral

[This paper is based largely on the author's experience in India. It reflects his views, as a field worker, on the usefulness of films for development purposes.]

This is an original article prepared for the DEVELOPMENT DIGEST.

A great deal of money is today being spent to make documentary films, not only in rich countries but also in low-income countries. A modestly produced documentary film in India costs about the same as constructing a rural hospital or establishing a small decentralised industrial subunit with an employment potential of four to eight persons. Yet in India alone, over 100 documentaries are produced every year by the Government of India film division. This figure does not include the films produced by various state governments, private producers, foreign-aid missions, and international bodies engaged in developmental work.

Other developing countries in Asia, Africa, and Latin America are producing documentary films. In the United States and highly developed countries of Europe also, millions of dollars are spent every year by development organisations, philanthropic foundations, and numerous national

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and international agencies to produce development films, primarily for the consumption of developing countries.

Their Potential as Instruments of Development

In all fairness to these governmental, nongovernmental, national and international agencies engaged in the huge film-production work, it must be said that film as a medium of communication has great potential as an instrument of development. Intelligent and appropriate use of film can bring about significant changes in deep-rooted attitudes and the widespread adoption of new practices. Many development efforts in peasant communities have failed because of a total lack of desire for change and for appreciably higher living standards. The overriding aspect of the use of film in rural development, therefore, is its role as a spur to change. The growth of expectations, brought about by intelligent use of films, paves the way for smooth acceptance and adoption of new techniques and skills coming from outside the community.

Properly used, a film will affect the habits, skills, behaviour, interests, and attitudes of its audience. Films are interesting to look at, and when the content is meaningful, everyone in the audience will learn more and remember it longer than if the information had been presented otherwise. A film has the advantage of not being limited by time or space. It can slow down an action to enable the normal eye to catch more than what it does in a real situation. An idea or project which might take hours to describe verbally can be presented visually in a few minutes. Film combines sound and picture for greater effectiveness. By its use of close-ups, it focuses attention; by its use of special effects, it enables its audience to study carefully what cannot be observed by the naked eye. People have a tendency to identify themselves with the characters portrayed in a film. For this reason, a film has greater power to motivate than any other development aid.

Development requires millions of individual and group decisions for progress-decisions to change traditional attitudes and ways, to learn new skills and the like. These decisions have to be based democratically on information and persuasion. Human resources need to be mobilised as fully as possible in order to achieve a modernised economy. Effective use of films to carry developmental communication and inspiration to large numbers of people -- on a timely basis, with the necessary frequency -- is important for a nation's economic and social development.

Shortcomings of Available Films

A question can here be justifiably asked -- do the available films on development fulfill the above roles? [illegible] development

worker with some field experience will testify that few, if any, of the films currently available are of practical use in development. Most of the films are produced to glorify certain success stories and tend to ignore real problems and failures. Whereas people do not necessarily dislike success stories, they are definitely unwilling to accept an overdose of them and, in the circumstances, gradually lose faith and interest in films and their producers. They soon begin to realise that these films are not produced for them; rather, they have been made primarily to congratulate a government, a foreign-aid donor, or a private company.

Not all the films, however, ignore their audience completely. There are some producers -- unfortunately a negligible minority -- who profess to produce their films primarily for the people. However their well-intentioned efforts are often marred by one or the other of the following weaknesses:

1) In an eagerness to appeal to large masses, they tend to filter out most of the technical details, to oversimplify the content of the film and to fill in a lot of entertainment. The resultant film, although it might amuse the audience, does little to induce them to change.

2) Very often, they are unable to resist the temptation to display artistic skillery, resulting in use of abstract images and symbols which the majority of people are unable to understand. In their desire to display the skill of camera and other refined photographic techniques, they even sacrifice the very communicability and understandability of the film. For example, a magnified picture of a mosquito, many times larger than life-size, often fails to convey the desired effect ("Thank God, we do not have such monster-mosquitoes in our village!") and can often be frightening to people not accustomed to cinematic distortion.

3) They tend to crowd too many things into one film, with the result that the audience does not have the time or capacity to register any one. The film becomes too complicated to be effective for instruction or motivation. Many people do not understand a film that shows, for example, a seed planted, growing, and flowering within a few seconds on the screen.

New ideas are hard to accept, because they come from a distance, and often hard to understand because of the new skills and scientific attitudes that are involved. The difficulty of gearing development information into local needs, aspirations, and

availabilities of supply and equipment often results in frustration. It is essential that the information communicated through the films be fitted to the realities of economic progress, problems, and needs. The communications task is to promote progress under the existing limitations of resources, etc., not to awaken desires that cannot be satisfied on an orderly basis. For example, it is useless to urge a farmer to use more fertilizer, unless fertilizer is freely available and unless credit is available, if necessary, so that he can buy it.

The films are often said to be able to bridge the barriers of nationality, language, and cultural variances. Such generalisations are erroneous. One cannot, and must not, ignore or overlook cultural and situational differences. The audience's opinion of, and trust in film media is often a local matter, both of the nature of film, the culture itself, and the tensions existing. Very few films will have general applicability in all areas of the world or even in all parts of one country. They need to be suitably modified and adjusted to the local situation and culture. Most of the communications failures in developing countries stem from ignorance or overlooking of this fact.

A great majority of the development films fail to communicate with the rural audience because their content is based on the tacit assumption that the audience already has a certain value-pattern derived from elementary reading and exposure to other mass media like newspapers, radio, etc. These films, therefore, assume a set of information and values which hardly any person coming from a rural area with 70 to 90 percent illiteracy will ever possess.

Feedback Necessary

Communication is a two-way process. A successful communicator should not only know how to communicate effectively, but should be eager to learn from the people as well -- how people feel about what they are seeing, what their reactions and responses are, what their rigidities are -- so further efforts to overcome communications barriers can be made. The most important factor is the communicator's judgment of what the people need. However well-intentioned and enthusiastic he may be, and however good the communications media he may employ, he will fail if people find his message irrelevant to their needs, in conflict with their major values, or unrealistic in terms of their local skills and resources. A good communicator must always feel the pulse of the masses and try to find out the factors which can inspire people to change the prevalent social order.

Must Define Audience

A film has to be judged for the appropriateness of the content, design, and basic appeal in relation to the kind of audience for which it is intended. For example, a film prepared primarily to invoke sympathy and support from rich people for development efforts will necessarily be different in content and appeal from one produced to prepare village development workers for their work or to induce change on the part of villagers. This kind of systematic assessment would bring many of the examples, superficially attractive and effective as they might appear at first, into a perspective which would reveal them as quite unsuitable for the purposes for which they were designed and the situations for which they were chosen. A film, for example, may depict the people's existing situation in such an unfavourable condition that the people may reject its message as not intended for themselves.

Intra-cultural Comprehension Difficulties

Today many of the documentary film producers are drawn from the well-educated and urban population and are thus separated by social and educational distances from the mass of the people. Without conscious study of the character and the levels of understanding of the people and frequent close contact, the well-educated film artists often tend to talk to themselves, using the vocabulary, the images, and the symbols which have meaning to themselves rather than to audiences.

Talking of close contact between film producers and audience, I am reminded of an incident which is very relevant here. In 1963, I was assigned the task of training district information officers of a state government in efficient and effective use of various mass media. One of the numerous duties of these information officers is to organise periodic film-shows in rural areas in order to secure people's participation in development efforts. Some of the films supplied to these information officers for screening are produced by the state government itself. As a part of the training program, the information officers were required to organise film-shows in neighbouring villages. They participated with the audience during and after the show to find out the response and reaction to the film.

I took this opportunity to invite the film officer of the state government, responsible for the production of these films, to accompany us during these showings so that he could also see for himself how people felt about his films. In spite of my repeated requests and his own director's formal instructions, he did not consider it worthwhile to spend an evening among the people viewing his films and remarked, "I know what people want and I give them what they

want." Unfortunately, his optimism was not borne out by the events of that evening and the information officers under training were shocked to find that, out of the three films screened, people did not appreciate or understand the message of a single one. Need it be emphasised that the governments of developing countries, with their meagre resources, cannot afford to spend huge sums on films that are unable to communicate?

Unanswered Questions

A quick survey of developmental literature will reveal an utter lack of serious study and thinking on the effectiveness of films in development, appropriateness of symbols and vocabularies used in the films, optimal information load to be carried by a film, and the like. For example, we do not yet know the extent to which the message of a film should be simple and specific, to which generalities should be avoided, or to which the film should give the audience what it desires instead of what the producer wants it to know. It is generally believed that an instructional or motivational film should not be fast-moving, and that it should not transmit so many messages that people may not be able to absorb them. It is argued that the action in the picture should be slow enough for the audience to connect one picture with the next in a logical manner. Most of the producers of the developmental films, however, simply cannot avoid loading their films with too many technical points, thus making them heavy and tedious to the viewer. But, where one should draw the line has so far been a matter of guess, personal opinion, and subjective judgment; no research findings are available to serve as guidelines. Likewise, it is a matter of common knowledge that, if entertainment and instruction are not properly balanced, the film may not lead the audience to the desired action. But, audience reaction is little understood.

Systematic research alone can provide us with the essential information, so that the vast amounts of money spent every year by various organisations on production of documentaries can be made to serve the people of developing countries in a more efficient, effective, and truly fruitful manner.

The problems facing developmental-film producers are numerous, and it has not been my intention to enumerate, in this brief article, all of them or even to offer a solution to any one of them. What I have attempted here is to focus attention on some of the problems experienced by a field worker in selection and use of the films for development programs with the hope that this might stimulate further thinking on the subject.

THREE PUBLICATIONS ON MASS COMMUNICATION AND DEVELOPMENT

Radio Broadcasting Serves Rural Development, Reports and Papers on Mass Communication, Number 48, Paris, UNESCO, 1964, US$ 0.75, 51 pp.

Schramm, Wilbur, Mass Media and National Development; The Role of Information in the Developing Countries, Stanford (Calif.), Stanford University Press and Paris, UNESCO, 1964, US$ 7.50, 333 pp.

Rao, Lakshmana Y. V., Communication and Development; A Study of Two Indian Villages, Minneapolis (Minn.), University of Minnesota Press, 1966, US$ 5.50, 145 pp.

Wide and general recognition of what the mass media can do for development by transmitting knowledge and changing attitudes has not been matched by a large and useful literature on how to use it, what it can do, and what it costs. These three publications contribute partial answers to some of the planner's questions about mass communication.

UNESCO's long-standing interest in the field is indicated by its series, Reports and Papers on Mass Communication. Number 48, on rural radio forums, is among the most interesting.

The radio farm forum was developed with great success in Canada. In 1956, UNESCO began a pilot project to try to adapt the Canadian techniques to Indian conditions. The technique is to organize village listening clubs for government radio programs on agriculture, health, education, and other development subjects directed

specifically at farmers. Group discussions follow, questions are directed to the station, and both questions and replies are broadcast.

This report contains two parts. The first, by B. P. Bhatt and P. V. Krishnamoorthy, tells of the spread of the forums in India, where there were almost 10,000 village clubs by 1964. An independent evaluation by the Tata School of Social Sciences, Bombay, indicated that forum groups showed impressive gains in practical knowledge. The authors analyze the organization and planning which made this expansion possible and the organizational difficulties. Left to themselves, most forums withered and died. Key factors in success were: having someone in the village responsible for the forum, an interested development-block officer, and one block-level official primarily responsible for the program. The second part, by Ram Marathey and Michel Bourgeois, describes UNESCO-sponsored Regional Training Courses in Educational Broadcasting in Kampala, Uganda and Bamako, Mali and an experiment in setting up a radio forum in the Malian village of Kalé.

Schramm's Mass Media and National Development, also UNESCO sponsored, treats the problem in a general, world-wide way. The author is particularly interested in the kinds of attitudinal changes that development implies; the correlation between development and the increasing use of mass media; information channels and the tendency of low-income countries to know more about the U.S., England, Russia, and France than about their neighbors; what the mass media can (and cannot) do for development; what we still need to know about communication and development; and the ingredients of a national communications system. The author insists that there is no prime mover of development, but that communication is one of the interrelated factors. He despairs of rational comparison of communication's costs and benefits with those of other development factors.

The depth of Rao's study of two villages in Andhra State contrasts with the breadth of Schramm's book. The author selected two villages of roughly equal size and endowments in the Telegu region. One was progressive and developing; the other was traditional and stagnating. His field work isolated the volumes and patterns of communication within the two villages.

In the progressive village, more people travelled and worked outside the village. The village elite had more interest in change and its status depended more on active leadership than on birth. The elite was better informed than in the traditional village and passed along its knowledge to other villagers. In the traditional village, even elite members who were well informed had little achievement motivation and contact with other village groups. In both villages, most information was received by word of mouth.

However, the progressive village made more use of mass media, and communicated the received information internally with greater efficiency. Villagers showed greater understanding of national and world happenings, ability to think abstractly, and to "put themselves into the shoes of" national and world leaders. Communication in the traditional village was as intense, but was concerned almost exclusively with subjects of purely local interest and tended to take place between exclusive and limited groups.

The book is well written and gives a brief, but detailed account of the human meaning of communication and development.

LAND REFORM

The second World Land Reform Conference, held in Rome this summer and sponsored by the United Nations and the Food and Agriculture Organization, was attended by about 300 official delegates from 77 countries and territories. It provided the occasion for an evaluation of progress made since the last conference in 1951.

The reasons advanced in favor of land reform over the past 15 years and the possible economic consequences have not changed. However, there is a general realization that the task is more complicated and difficult than it may have appeared in 1951. Papers emphasized that land-tenure reform needs to be associated with such supporting services as credit and technical assistance so that the new owner can improve his farming techniques. Recognizing the sometimes disappointing results of land-reform laws, more research into real impact at the local level was advocated. In general, considerations of equity and productivity seem to be inextricably linked, and little interest was shown in the cost of land-reform programs.

In the first paper in this section, P. B. DIEBOLD reviews how land reform affects the planner. The London Economist takes stock of land-reform efforts in Latin America. After recapitulating the possible development effects of land reform, Elias TUMA argues for the importance of "grassroots" research and presents the conclusions of some he has undertaken on land reform and capital formation. The final article by William THIESENHUSEN presents such research in Chile and an interesting suggestion for improving farm management as reform takes place.

HOW THE PLANNER SHOULD VIEW LAND REFORM

P. B. Diebold

[From "Land Reform Planning as an Integrated Part of Agricultural Development Planning," a paper presented at the World Land Reform Conference sponsored by the United Nations and the Food and Agriculture Organization, Rome, 20 June - 2 July 1966. Document No. RU:WLF/66/F.]

These are excerpts from the paper.

To be effective, land reform must be closely integrated with agricultural development planning as a whole, and indeed with the development plan for the entire economy. In particular, the nation's financial capacity will influence the manner, timing, and sometimes even the feasibility of land reform.

Costs. Funds will have to be found not only to provide the cost of dividing up and preparing the land for occupation by small holders, but also to provide those services previously rendered by landowners, such as credit or the supply of fertilizers. Since the usual short-term effect of the transition from a large, extensively farmed estate to peasant holdings is a decline in production, numerous other measures, usually complementary among themselves, will be needed to increase output. Improvements in agricultural research, extension and marketing are examples.

Production or equity. Much will, of course, depend on whether the government places more

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emphasis on increasing agricultural production, and hence on the material welfare of the farmers, than on achieving a better distribution of income derived from agriculture. If the government's main concern is to secure an equitable distribution of land, the large number of recipients may slow down improvements by reducing the average size of farm to an uneconomic level. Similarly, concentration on the rapid increase in production may entail the relative neglect of the poorest farmers, who are frequently the least efficient ones. These opposing priorities, however, need not lead to a clash as regards the policy to be adopted, but rather to differences as to the quantity of resources which should be allocated to different objectives and at different periods of time.

Land Reform and Alternatives

The choice of priorities can be most effectively carried out if a calculation is made, in advance, of the alternative costs and benefits of the various land-reform projects, and if the cost of these is compared with that of alternative projects (other than land reform) for agricultural improvements. Such calculations should be set against a background of the country's overall resources and priorities. A clear distinction should be made between the cost to the country's exchequer and the net benefit or loss to the national resources (e.g., as a result of changes in production planning from the land reform), on the one hand, and the value attached to the social objectives and intangible benefits that are to be achieved, on the other.

Complementary agricultural projects. In most cases, agricultural projects of a general service nature are complementary to land-reform projects and a precondition of successful land reform. When it comes to setting the priorities for the agricultural development plan, therefore, projects aiming to provide or improve various agricultural services will often precede, or be given higher priority than, land reform itself, including projects for land distribution.

Cost estimates. The setting of priorities among projects requires fairly precise estimates of costs and should be embodied in a concrete and realistic agricultural plan. Inadequate budgeting for all the projects and factors involved in and resulting from land reform is one of the most frequent causes of failure of land-reform programs. Land reform can never be better than the quality of services to agriculture which the government is able to provide.

Some Planning Problems of Implementation

It is vital to carry out periodic assessments of the pace of implementation of land reform. Indeed, such assessments should be a built-in feature of any land-reform program.

Institutional factors. While availability of funds is the first consideration in implementing a land-reform program, it is also necessary to examine the relevant institutional and infrastructural factors. The creation of institutions requires not only funds, but also time and skilled personnel. Since skilled personnel can only be obtained by education and training involving long periods, the bottleneck in implementing plans and programs lies in the scarcity of such personnel. The planner will therefore have to phase the implementation of a land-reform program to fit in with the creation of agricultural services and institutions. The latter are again dependent on the availability of trained personnel and on the training facilities to increase such personnel. As a result, in some cases, land-reform programs may have to be reduced in size in order to be able to make sufficient funds available for agricultural education, training, and the creation of services.

The infrastructural prerequisites for land reform are not limited to agricultural institutions and services; they involve building roads and other forms of communication, making power available, providing water for drinking and irrigation, and creating industries both for processing agricultural products and for supplying the needs of agricultural consumers. Thus, the integration of a land-reform program into a general development plan requires a mutual adaptation of projects.

Problems of transition. A transition period is marked by transfers of ownership from large landlords to small farmers, usually former tenants, or by settlement of new areas, some reclaimed from forests, other reclaimed through irrigation, drainage, etc. During this period, a temporary reduction in overall production frequently occurs, resulting in a diminishing national product and sometimes in food deficits and losses of foreign exchange. These economic costs must be taken into consideration in the overall planning of the country's economy. In particular, provision for food and other aid to new settlers and others affected by the temporary drop in agricultural production must be made.

Markets. Experience with land-reform programs has frequently shown that, once the farmer produces more, no remunerative markets are available. Sudden increases in production of certain products within specific regions may upset regional markets by offering more of a product than can be absorbed by the

effective local demand; markets outside the regions may not materialize because of product or transporation costs or, merely, the absence of trade channels. For this reason, a careful study of markets for additional agricultural products must go along with the planning of land-reform measures.

Supporting services. Ultimately, however, the success or failure of land-reform programs will usually turn on the provision of the necessary supporting services for farmers -- e.g., credit, marketing, or extension facilities -- and on the adoption of steps to bring the agrarian and social structure generally into line with the objectives of land reform by effecting a change in attitudes, social customs, and class relations. Legislation aimed at sweeping away or modifying outdated provisions or restrictions can be of great help in this connection. Education, too, can play an important part. But, time is perhaps the main factor involved.

Densely Populated Areas

In countries with a high man/land ratio, structural reform may have to proceed simultaneously with the removal of part of the population to sectors other than agriculture or, if available, to less densely farmed areas. However, it may not be possible, given a high rate of population increase, to effect sufficiently large transfers to prevent absolute numbers on the land from increasing. Such a situation makes it all the more imperative to raise agricultural productivity.

Small farmers who own their land. Where the peasants own their land and there is little or no unusued land or large, extensive estates to be split up, some improvements can be effected by consolidating small and widely scattered fields. However, the problem is basically one of improving technology and methods. These measures include the usual ones of improving access, layout, drainage, irrigation, marketing facilities, and the farming pattern by, for example, changes in crops, in crop rotation, the introduction or extension of livestock, by better breeding of stock, better feeding, or by greater and better material inputs, such as fertilizer, pesticides, seeds, and, in some cases, machinery.

Naturally, the solution will differ from place to place, but, generally speaking, the two major objectives will be to raise productivity and to remove part of the agricultural labour force, provided appropriate steps are taken to reduce the demand for workers at peak periods. If the rural labour force can be cut down by such transfer, this will make possible larger land holdings and hence greater production per farmer, by achieving approximately the optimum size of farm, a reduction in fixed costs, and a more efficient application of agricultural services.

Tenant farmers. If the land is farmed by small holders who are tenants or sharecroppers, land reform could, for instance, establish rent ceilings and other rights, such as permanent tenancy rights and provisions in case of termination of the lease for the compensation of the tenant for all improvements made. Such an arrangement gives the tenant maximum security. It offers him as great an incentive to improve agricultural methods as if he were the owner.

The other way to dispose of an unsatisfactory land-tenancy system is to transfer the land from the landlord to the former tenant through expropriation. Such a measure would, at least, improve the living conditions of the former tenant by giving him the crop share which formerly went to the landlord. The increased income through such a transfer will be in direct relation to the amount of the rent formerly paid. However, it may be diminished through a fall in production unless steps are taken by the government to provide the supporting services formerly rendered by the landlord. If such arrangements are not feasible, a corrective land-tenancy law is preferable to expropriation.

Countries with Land Reserves

The situation is easier if the land occupied by small holders is only a small part of the total agricultural land, as is the case in Latin America and to some extent in Africa and the Near East. After the extent and quality of the unused or underused land resources have been carefully appraised, a land reclamation and settlement plan should be prepared. Careful consideration has also to be given to the proper farm size for the managerial capacity of the new farm operator and to the phasing over time of settlement. The potential use of the new land resources to be settled must be appraised independently of the traditional farming pattern, with a view to establishing what such land can produce best and determining the optimum layout and size of farms for the new settlers. Production targets should correspond to the estimated potential of the new land considering the settlers' efficiency.

Priority should be given to new settlements only if they are clearly more productive and lead to the withdrawal of farmers from the more densely populated agricultural areas to other sectors of the economy. In certain circumstances, the available unused land resources are best left idle until it becomes profitable to put them into cultivation. This kind of situation exists in a great number of countries, especially in Latin America, where very sparsely populated forest and grass lands cannot be exploited profitably because of distance from markets and the lack of infrastructure, the creation of which would involve enormous investments.

LATIN AMERICAN LAND REFORM ASSESSED

[From "More Law than Land for Latins,"
The Economist, London, 2-10 June 1966,
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These are excerpts from the report.

Everybody now sings the litany of land reform. In Latin America the singing is so lusty that one might believe the landless, wageless peasant-serf had had his day. Years of rhetoric and controversy have led at last to new land laws for most of the republics. Constitutions have been amended so that expropriated land can be paid for in bonds instead of in cash. It looks like a breakthrough. Yet, despite their high-sounding preambles, the new agrarian reform laws have, in fact, been so cautiously written and so blunderingly executed as to have had little impact on the iniquitous land-tenure system under which nearly two-thirds of farming land is in the hands of 1 percent of all landowners.

In some countries, the laws passed affect only a handful of the large estates. Most of the new land-reform agencies are starved for funds to expropriate and redistribute properties. Yet, some former owners of large, under-productive haciendas have been so handsomely compensated as to appear like winners of the national lottery. A land-reform commission summed up the situation at the recent Buenos Aires meeting of the Inter-American Economic and Social Council when it reported: "from the point of view of land distribution, the projects realised have little significance and cover a small number of countries."

The idea of agrarian reform has kindled such lyrical enthusiasm, especially among the young, as a symbol of social justice and national redemption that many have not realised that this is one of

the most complex enterprises any society can undertake. So far, the human, financial, and technical resources invested have been entirely inadequate to the task of turning landless peasants into independent farmers. All the same, the task must be undertaken.

Peasant revolts and land invasions have frightened governments into enacting the laws. But, all too often, these laws have done little for the peasant save give him unnegotiable title to the miserable patch of hilly, acidic, eroded soil that the landlord once assigned him in exchange for 120 days of unpaid annual labour on the hacienda. This kind of land distribution multiplies the number of uneconomic, miniscule holdings called minifundio. "I believe minifundio are much more dangerous than latifundio [huge estates]," Colombia's president-elect, Carlos Lleras Restrepo, said recently. "These increasingly small properties [usually less than five acres] cannot maintain a family, and the problem, constantly aggravated by the divisions imposed by inheritance laws, is creating a class of 'proletarian proprietors' with even lower incomes than the miserable sugar cane cutters." Indeed, most guerrilla outbreaks in Latin America over the past 10 years have occurred in coffee-growing minifundio areas.

Peru's agrarian reform, two years old, has unwisely invested most of its scant resources in the Andean highlands, where land is scare and poor but land hunger is very great. There are ample virgin lands along the broad rim of the Amazon basin, but peasant invasions in the sierra and the lack of land to meet this immediate crisis have forged the context of Peru's reform effort. It promises little economic benefit and a batallion of political troubles.

The Lima press is conducting a furious crusade against the government's operation, accusing the Organización Nacional de la Reforma Agraria (ONRA) of wild mismanagement. But ONRA's problem is not so much bad management as the failure of its agents to establish a trustful working relationship with the peasants.

This difficulty is encountered again and again in Latin America. Land-reform institutes have been set up in most of the republics; institute jeeps manned by young agronomists in white sportshirts are a new sight in many provincial towns, but they rarely visit the countryside. Too often, agrarian-reform agencies merely reflect the traditional class structure, with well-paid agronomists and social workers aloof behind their desks, while others, less educated but more zealous, perform the arduous legwork of sowing new techniques among the peasant settlements.

Nearly all the significant changes in the land-tenure structure of Latin America were produced by violent or threatened action by

the peasants themselves. In Bolivia's sweeping 1952 revolution, the Indian serfs chased the landowners from the haciendas and divided the lands, tools, and animals among themselves; only later was agrarian reform decreed. Latin America's classic agrarian revolution is still the victory of Mexico's peasant armies 50 years ago. After the revolution, many of the big estates were turned into communal holdings, the ejidos. The peasant won his freedom, but production dropped sharply (as it did in Bolivia after its revolution) and stayed low for many years. Mexico's agricultural misfortunes ended when the country invested heavily in big industrial plantations, enriched by large-scale irrigation and mechanisation schemes, which enabled it to export industrial fibres, feed its cities, and complement the social gains of the subsistence ejido system. There is a lesson here for Mexico's sister republics.

Cuba, too, provides a lesson of sorts, even though the revolution's farming economy has gone haywire. For all their organisational failures and their errors in assigning crop priorities, Cuba's agricultural planners have always recognised the importance of investment and of organising production in large units -- often, in Cuba's case, too large. The Castro regime collectivised instead of parcelling out the nationalised haciendas. The Christian Democratic leaders of Chile's new agrarian reform are also keeping the expropriated haciendas intact and report increased production from a cooperative, profit-sharing system.

But, in most cases, where there has been effective land distribution, the reform organisations have turned their paternalistic attention exclusively to the small farmer. Their negative attitude towards large-scale agriculture ignores the obvious need for massive investment to modernise the underproductive big estates if food requirements are to be met. In Chile, for example, two-thirds of all arable land lies fallow or in natural pasture, including 40 percent of the country's irrigated farmland. And while in the past 30 years Chile's human population has doubled, the cow population has remained the same. In Latin America, hacienda ownership is considered more as an index of social prestige and as a hedge against inflation than as an enterprise to be exploited.

Agricultural stagnation is aggravated by the lack of invention and initiative in opening new lands. Population pressures are forcing peasants to migrate towards the jungle frontier without benefit of either land titles or the most rudimentary marketing facilities. Yet, not one of the seven countries that border the Amazon basin has adopted any variant of the century-old United States Homestead Act, that effective and protective legal instrument for the family-farm settlement of the American West. One wonders why more trans-continental roads are not being built, with adjacent lands

granted to the peasant workmen building them, rather as virgin farmlands were assigned to the railroads laying track across the North American continent. The huge American-financed development effort in the Bolivian Oriente has shown that migrating Andean peasants can be induced to settle and stay in the tropics -- living much better than in the highlands -- if aided by malaria control and construction of all-weather roads. For all the new land-reform laws, the crisis of land-hungry men is deepening. Spotty attempts to paternal social-welfare programmes are not what is needed.

FINDING OUT HOW LAND REFORM AFFECTS DEVELOPMENT

Elias H. Tuma

[From "Agrarian Reform and Capital Formation," a paper presented at the World Land Reform Conference sponsored by the United Nations and the Food and Agriculture Organization, Rome, 20 June - 2 July 1966. Document No. WLR/66/1.]

These are excerpts from the paper.

The contribution of agrarian reform to economic and rural development varies according to the scope, content, and method of implementation of the programme and the seriousness with which it is carried out. It is proposed here that 1) the positive contribution of reform to development is not obvious, and 2) that there is a need for evaluation of the effects of reform, particularly of many aspects of reform on which there is little information in the literature, on the economy.

What is Agrarian Reform?

Agrarian reform may be described as a complex of measures intended to improve the agrarian structure, which is defined as comprising land tenure, pattern of farming operations, terms of land-holding, and somewhat more remotely, credit facilities. Land tenure relates to title to the land and consequently to the right to its produce. The pattern of farm operations deals with the technical conditions surrounding cultivation, the management of the farm, and its organizational setup. The terms of holding describe the conditions of rent and the layout, such as the size and shape of the

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farm. Agrarian reform, then, comprises all measures which could cause a rapid improvement in any or all of these components. It may be analyzed as land-tenure reform and land-operation reform, which includes the reform of credit facilities.

How It Can Contribute to Development

Agrarian reform contributes to development by increasing the desirability of improvement, by increasing its technical feasibility, and by making it economically and financially possible. Increasing the desirability means raising the incentives of the farmer or decision maker to take advantage of the opportunities open to him. This may be accomplished by land-tenure reform. Land-operation reform facilitates the technical, economic, and financial realization of these opportunities by putting the means to agricultural improvement at the disposal of the farm. However, the successful contribution of reform measures to development can be ascertained only by observing the results of the land-tenure and land-operation reforms.

More specifically, reform contributes to economic and rural development by generating an increase in farmer productivity, and consumption and/or capital formation on the farm. In addition, it contributes to total development by inducing the farmer to invest in the nonrural sector, or by redirecting rural resources to the nonrural sector regardless of the wishes of the farmer. Thus, the reform may increase the total agricultural product, but the net or disposable income of the farmer and his standard of living may remain the same, as would happen if the product increment were taxed away to be used outside the rural sector. It is true that redirection of the resources to the nonagricultural sector may be useful to total development, but it is not certain that the results would improve the rural economy or contribute to the well-being of the individual farmer, at least not in the near future. In contrast, the reform may raise the farmer's income and consumption but contribute little to the development of the economy by stressing consumption to the detriment of chances of saving and investment or capital formation. Therefore, in evaluating the contribution of reform, it is necessary to ascertain the degree to which the improvement of the agrarian structure has affected the rural sector of the economy and how much of an impact it has had on the total economy. The distinction between the two kinds of impact is significant, since they contradict each other.

From the point of view of the individual farmer, agrarian reform takes place when the results are favourable to him, namely when his standard of living has been improved or when his capital stock has been increased, thus potentially increasing his future income. If reform brings about one or both of these results, it may

be regarded by the farmer as successful. It should be noticed that these two possible effects are intertwined in the sense that, if the farm product has been increased, the increment may be used either to raise the farmer's present living standard through higher consumption, or to raise his future standard through reinvestment. Whether or not a meaningful balance can be achieved depends primarily on the willingness of the farmer to postpone current consumption in favour of a higher future consumption.

The means by which agrarian reform contributes to rural and total development will vary by time and place. In land-tenure reform, on the one hand, the creation of private holdings may be the right approach in one country, while the creation of ejidos, collectives, or state farms may be wiser in another. The choice of measures of reform and of methods of implementation depends largely on the objectives of the reform. However, in general, reform of the land tenure improves agriculture and raises productivity to the extent to which it increases the tenure security of the farmer or decision maker, enlarges his stake in the farm product, and permits him to take advantage of the economic opportunities that may be open to him.

Land-operation reform, on the other hand, contributes to the development of agriculture by increasing the opportunities open to the decision maker and stimulating his awareness of these opportunities. For example, introducing machinery to agriculture increases the opportunities for higher productivity and output, but it also acquaints the farmer with the potentialities embodied in other changes related to mechanization and gradually equips him with the skills requisite for them. Similarly, cooperatives may increase the opportunities that are not otherwise open to the individual, but also educate him in taking advantage of these opportunities. In other words, land-operation reform implies improvement through the substitution of more productive or efficient techniques of agriculture.

Furthermore, land-operation reform contributes to development by increasing the feasibility of realizing the advantages embodied in new farming techniques and methods of farm organization and management by modifying the terms of holding and the layout of the farm. To continue with the same example, mechanization is feasible only if the farm is large enough for machine operation and only if it is consolidated into economically efficient units. Therefore, land-operation reform can contribute by enlarging the size of the farm or by consolidating its fragments.

Knowledge of the opportunities, technical feasibility of implementation, and high incentives are all necessary but not sufficient

for the successful application of reform measures. It is prerequisite that means of financing be accessible and known to the farmer or decision maker. Land operation reform can contribute both by helping to establish the right financial institutions to extend credit and by acquainting the farmer and decision maker with the existence and jurisdiction of these institutions. It is important that the decision maker should know the technical value of a tractor on his farm; it is also important for him to want to use the tractor, but it is equally essential that he be able to obtain the services of a tractor through suitable financing facilities.

An ideal programme of agrarian reform would include all those measures required by the specific situation. In actuality, however, few reforms are comprehensive; most programmes emphasize one aspect of reform or another. Nevertheless, partial reforms are important and may contribute heavily to rural improvement and to total development, especially if these partial measures are wisely chosen, i. e., if they influence the decision maker and if they affect a factor limiting farm improvement. If the farmer believes that increasing production will hardly raise his income because he cannot market the product, then providing the means to reach a market may be the right solution. Improvement must, therefore, be based on a knowledge of the situation.

Negative Aspects

So far, reform has been discussed as a positive contributor to development. There may be negative effects as well. For example, the change in tenure may lead to oversecurity of the small farmer and thus discourage his mobility; or it may reduce the size of the farming unit below the efficient minimum. It may also cause enough insecurity among landlords to discourage them from investment. Redistribution of income through reform may encourage consumption, restrict saving, and thus hinder capital formation and development. These possible effects need to be considered in any evaluation of reform. It may be suggested that, in actuality, many reforms have contributed to development less than they are potentially capable of because of these countereffects.

Evaluation

It is easy to introduce or plan a reform programme, but it is not so easy to implement it successfully. It is not easy either to measure the achievements of reform, once it has been implemented. Yet, to be able to learn from the experience of the past two decades and to be able to continue in guiding reform programmes in the future, it is essential that adequate evaluation be possible and be undertaken.

The criteria of evaluation are usually established with a certain objective in mind. Since economic development is prominent in the minds of many policy makers, it may be helpful to establish criteria by which the reform contribution to development can be assessed.

It is essential that the evaluation be based on the results observed on the individual farm, since it is here that reform actually takes place. If land-tenure reform or land-operation reform has been successfully implemented, the economic effects may include a higher production, a higher level of income or standard of living, a higher rate of capital formation, or a combination of these variables. In other words, if the purpose is to evaluate the contributions of reform, the results on the individual decision-making unit or farm should be the only significant indicators.

Most of the available studies on the impact of reform have been based on aggregate data describing the relationship between the rural and nonrural sectors, or describing the conditions of the total economy. These data are helpful to estimate the degree of development in the economy, but not the contribution of reform to that development. In fact, it may be suggested that the use of the aggregate data tends to hide, oversimplify, and exaggerate or overestimate the actual contributions of reform. A few examples will illustrate the point.

Aggregate data on production and productivity do not show which farms have been improved and which have not. In fact, they may fail to show any change if the successes on some farms have been offset by failures on others. The failures of aggregation become quite significant when figures pertaining to production on large farms and small farms, on reformed farms and nonreformed farms, and on those producing subsidized goods with the farms producing nonsubsidized goods are lumped together. That total production may have increased is a good indication of development, but not necessarily of the contribution of reform. Has production or productivity actually risen on the reformed farms of Mexico, as has been usually suggested?

Or take the question of potential saving by the rural population. According to aggregate data, developing countries save 15 to 20 percent of their national income. Therefore, it is suggested, the farmers do not lack saving potential. They only need opportunities or know-how to utilize these savings. It would be quite helpful to find out the distribution of intended and realized saving among farmers who have benefited from reform programmes according to size and source of income. Until such information is available, it would be misleading to depend on aggregate figures as indicative of farmer behaviour.

A common form of oversimplification which is detrimental is misrepresentation or confusion between means and ends. For example, it is often reported that so many cooperatives have been established, and that is taken as an indication of reform achievement. Yet no information is given regarding the capital of these cooperatives, their membership, or the actual existence and functioning of branches where they are needed. Obviously, the establishment of cooperatives is only a means to an end, but no information is given on the goals realized by the creation of this institution. Similarly, data abound regarding the establishment of credit facilities and the amounts of credit extended within a given period of time. Yet, little is told as to who received these credits or how many of those who needed it badly were able to benefit or even knew of the existence of these facilities. The data in these cases are incomplete and would be greatly misleading if used as criteria of the success of a reform programme.

The list can be expanded greatly.

Need for Knowledge of Reform Results

Two decades have passed since the current movement for reform has been initiated. Therefore, it is possible to gain some knowledge from the successes and failures of reform. Such knowledge can be invaluable to avoid mistakes in the future and to be able to utilize the potentialities of reform to the optimum in aiding rural and total development.

Major gaps exist in the literature regarding the effects of reform on development. It may never be possible to fill some of these gaps, but others can and should be filled. For example, what changes in the location and the method of decision making have resulted from reform, including the establishment of cooperatives? To what extent has the farmer in his new status managed his own affairs and how has this affected his productivity? How much has land-tenure reform increased the security, stake, and, therefore, the incentive of the farmer or decision maker to improve his land? How much has land-tenure reform increased the initiative of the farmer to improve the operation of the farm out of his resources? What actual changes have been realized by land-operation reform, such as mechanization, cooperation, rationalization of production, intensity of farming, and what actual changes in income or investment can be attributed to these measures? What credit facilities have been established and to what extent do individual farmers know of these facilities and utilize them? What results, if any, can be observed in the area of investment as a result of the new credit facilities? Has land-tenure reform or land-operation reform interfered with or slowed down development? Has it obstructed capital formation on the farm or outside it? Has it discouraged farmers

from seeking any constructive alternatives they might have pursued in the absence of reform?

The investigation of these changes is difficult, but not impossible to accomplish. A series of studies of individual farms and farmers conducted uniformly in different countries could answer these important questions. The investigation might concentrate on results, such as the changes in product or income and in the method of disposal of income increments: were the increments consumed or saved, and how have the savings been used, assuming they were not hoarded? Such an investigation would show the impact of reform on potential saving, the degree of awareness of opportunities, and the extent to which these opportunities were being exploited. Another point that might be clarified by such an investigation is the degree of compatibility or incompatibility between objectives of the individual farmers and the reform programme in general; it would also help to explore the relevance of such compatibility to the success of reform. It may be that many reforms suffer from a lack of communication between the farmer and the reformer due to the different goals pursued by each of them. Although such studies might be costly and tedious, the results could be highly rewarding, putting agrarian reform in a new framework in which systematic and careful planning, guidance, and evaluation became possible.

[Given some of the unanswered questions in the foregoing analysis, studies were undertaken in two countries to determine how the gaps might be filled by finding out how decisions were made at the grass roots where development must take place. Both countries, unidentified in the study, had recently undertaken major programs of agrarian reform. The two, except for their location in semi-arid regions, were chosen because they had as little as possible in common. In one, agrarian reform consisted of highly capitalized colonization schemes to create viable farms run by people who had not previously been farmers. While the scheme was certainly quite costly and heavily subsidized, it could generally be called successful and the farmers satisfied. In the other country, a "feudal" landholding and tenancy system had been reformed to create family farms. Outside capital and technical assistance were less available to these farmers, and the scheme was less successful in many respects.

The studies, based on local field research, investigated the impact of the reforms on capital formation, one of the most important indicators of economic development. In spite of the dissimilarity of the experiences, certain common features in farmers' attitudes toward and practice of capital formation were noted. They are presented below.]

The tentative conclusions arrived at are the following:

1) Contrary to the commonly held opinion, farmers are well aware of their problems and of the need they have to overcome them if they are to maintain an economically viable operation. They have formed an opinion of the possible solutions, regardless of their level of education or training in modern techniques. Although these solutions lack detail as to content and method of implementation, they nevertheless contain enough sound thinking to deserve more attention than they have been receiving. However, because of low incomes and limited available resources, farmers are unable to raise productivity. As long as productivity is low, their incomes remain low, and as a result they appear lacking in initiative and aspirations.

2) Contrary to the common belief that many reforms fail because the farmers are lazy, lacking in incentives and initiative, or unwilling to cooperate, the interviews suggest the opposite. The farmers work hard, in fact more so in traditional agriculture than on modern farms, to earn their meagre living. In most cases, they are willing to cooperate whenever they are properly informed as to what to do. Lack of cooperation seemed to result from the inadequate communication between the policy makers and the farmers. The men at the top frequently formulated policies without consulting the farmers or finding out whether these policies were feasible or reconcilable with the pattern of farming in the areas concerned. For example, in one case, membership in the cooperation was made mandatory, although, according to an official view, only 20 percent of the farmers were capable of paying the membership fee out of their own resources, and although no arrangements had been made to establish cooperatives in the villages. As a result, the farmers have had little confidence in the cooperative movement.

It may be suggested that, where little communication exists or only a one-way communication from the top downward, the results may be satisfactory to the extent that resources are made available to the farmers in order to implement the policies recommended. But when neither communication nor resources are available, only chaos, lack of confidence, and inadequate cooperation can be expected.

It may be suggested further that as long as policies are not to be imposed on the farmers, the best results may be achieved by consulting with them before announcing or even formulating the policies. No such consultation was conducted in the two countries studied, as far as the records show. Therefore, the farmers did not have an opportunity to bring their influence to bear in shaping farm policies that were intended for their benefit and consequently found

no reason to give whole-hearted cooperation to the new projects. Consulting with the farmers in advance or surveying their opinions regarding good solutions to the farm problems may be the best means of establishing communication with them and of winning their full cooperation.

3) Net investment or capital formation on newly established farms seems to be dependent on the availability of external funds for investment. The more accessible these funds are, the more interested the farmers are in investing. Even when the farmer's income is above the subsistence level, he seems to hesitate in investing out of his current income. Yet, he is willing to save and invest on account of future income. This attitude may be explained partly by the fact that investing out of future income (by borrowing) would put external funds at his disposal and would also tie amortization of the loan to the realization of higher incomes. If no such incomes were realized, it seems doubtful that he could be expected to repay, especially if the loan is from official sources. Thus, he seeks to reduce the risk of borrowing and the danger of losing his assets (land) through possible default. Therefore, given the relatively low-income level of most farmers in reform areas and hence the potentially low level of savings, and the hesitancy of the farmer to save for the purpose of investment out of his current income, it is doubtful that much farm improvement can be expected without providing external funds for purposes of capital formation, over and above what is made available as working capital.

This observation is supported by the experience of Japan since the post-war reform. Capital formation on the newly created family farms has been dramatic, increasing by about two-and-a-half times between 1957 and 1961. However, the investment funds have derived almost totally from external sources. About 20 percent came from the government, and a small percentage came from the farmers' increased income resulting from inflationary prices and reduced rents. The rest, or the larger portion of the investment funds, has depended on nonagricultural earnings which constituted 45 percent of the rural income in 1961. A similar tendency may be observed in the readiness of the farmers in China (Taiwan) to take advantage of external funds to improve their farming operations.

4) Investment by individul farmers on new farms seems related to whether or not there is a well-defined official policy on farm development. A well-defined policy helps determine expectations and therefore the planning and use of resources. Then, where aid or loans are expected, the individual is assured that his demand for funds will be satisfied. If no aid can be expected, he knows that investment must come from his own resources, and he must plan for it. The most difficult position, however, occurs when the policy is

not well defined and the farmer is not certain of what to expect. This uncertainty has been in evidence in many reform programmes that have been undertaken.

5) Regardless of the target, it appears that there is a higher probability of success through crash programmes which utilize intensive investment of capital and provide adequate guidance and supervision than through programmes that are spread out thinly. Even though the programme may have to be limited to a relatively small area, intensive action tends to improve the agriculture of the area and leave a visible impact on the surrounding farms. In fact, field observations suggest that it may be wise to reconsider the conventional approaches of agrarian reform and to pay more attention to the possibilities of intensive colonization of new lands and resettlement projects. Even if fallow land is not available for colonization, programmes of this sort may be introduced on existing village lands with the intention of rebuilding the farm community and overcoming the obstacles at a conspicuous enough pace to register an impact.

6) The field visits suggest that the limiting factor in the development of new farms is the shortage of resources available to the individual farmer. Regardless of how much or how little the farmers know of their problems or of the solutions to those problems, their initiative seems to be aroused or dimmed by the prospects of being able to acquire the resources they need. It is easy to understand the position of a farmer who questions the wisdom of clearing his land of rocks when he has no hope of cultivating it because of the lack of water and his inability to dig a well on his own, and when outside aid is not forthcoming. Much can be done to alleviate these problems within the framework of agrarian reform, but positive supporting policies are necessary to bring about solutions.

7) Finally, it seems that the farmer's interest focuses on improvement in his level of income. Even where incomes have risen, the farmers seem under pressure of a demand pull from the non-agricultural sector. Whenever opportunities arose, the individual farmers were ready to leave the farm in search of the higher income. Even when there were no such opportunities, the rural people expressed hope that their children would succeed in moving out of the farm to better their level of living. The implication of this attitude is that farming has not become more attractive as a result of reform nor have incomes risen enough to stabilize the farm communities, even where government policies have been quite positive. If correct, this evaluation raises questions as to how much emphasis should be paid to agrarian reform. Agrarian reform has reached a crossroad and careful consideration is necessary to decide whether to continue or to turn in a new direction.

IMMEDIATE EXPROPRIATION -- GRADUAL DISTRIBUTION: SOME CHILEAN LAND-REFORM INITIATIVES

William C. Thiesenhusen

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These are excerpts from the article.

Most commentators on agrarian reform in Latin America advocate that expropriation of land be "rapid and drastic." Speed is crucial, since piecemeal expropriations over a long period, each accompanied by a spate of publicity, tend to render owners of agricultural land apprehensive about the future, thus creating further deterioration of an agricultural sector in which inefficiency -- as well as injustice -- inspired the initial demand for reform. Landlords quite understandable react to this insecurity by making only minimal current outlays while foregoing basic investment commitments. The other side of the matter -- how quickly to turn expropriated land over to campesinos as individual proprietors -- has been less discussed.

Up to the election of 1964, Chile's total agrarian reform effort was very small, and land was turned over to campesinos immediately in family-sized parcels. Title was granted when at least some principal and land interest payments had been met.

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Using several private-sector case studies, this article will argue that the land-tenure structure in Chile might be better changed by somewhat slower steps toward individual proprietorship. In a government program, this would suggest that, although land should be taken quickly from all owners to be affected, it might be held in the public domain and managed centrally for a time while new proprietors are being trained on the farm for their new roles as entrepreneurs.

Opponents of this idea will assert that anything short of immediate individual ownership is a continuation of the anachronistic and almost feudal system in which the government is substituted for the landlord. They may also be concerned that government management of land -- even for a short period -- may be something less than enlightened. Besides, they will assert that new owners without titles might be just as prone not to invest as landlords threatened with expropriation, since they feel their new land rights may be confiscated one day.

These are perplexing problems, but even more important seems to be the necessity of maintaining productivity -- which has already dropped to dangerously low levels in Chile's farming sector -- should the means of agricultural production be redistributed to the extent promised. At least, drops in productivity that result from changes in the organizational matrix of agriculture must be kept to the very short run so that attention can be firmly focused on raising output above prereform levels.

The declines in production for market so often associated with land reform are usually traceable to two causes. Firstly, home consumption increases rapidly, reducing the available surplus if production remains unchanged. Secondly, lack of entrepreneurial ability on the part of the formerly landless will usually also affect total production. If land reform moves campesinos more slowly into the trying experience of full ownership and managership, some restraints can be placed on excessive expansion of home consumption and campesinos can acquire managerial skills in a systematic way in preparation for full ownership. Such a process may involve fewer disappointments for the campesino and certainly should reduce the shock to the economy from a possible change in marketed surplus.

Government management for this interim period need not mean that bureaucrats would be making technical decisions; it does imply that experienced and trained agriculturists would have to be in authority. This intermediate period would give the government more time for planning a rational program of overhead capital (now designed for large farms and very expensive to divide) in concert with reform beneficiaries. Also, institutions through which new

owners could make their needs known, receive services, and generally counterbalance the market system, might be more soundly built.

The INPROA Program

However nebulous and idealistic this sounds in the abstract, a "gradualistic" program of land reform is the subject of experimentation in Chile. The government set up one large pilot project in 1964. Even earlier, the Instituto de Promoción Agraria (INPROA), a foundation that the Roman Catholic Church set up to distribute some of its lands, had begun experimenting with a "gradualistic" program of land turnover.

INPROA plans to distribute new land in three stages. In the first stage, once it has received an estate for subdivision, INPROA will foster the creation of a cooperative among beneficiaries, who will farm as sharecroppers for one year. Meanwhile, a cooperative made up of these tenants will be organized.

In the second stage, each estate will be leased to the tenants by their new cooperative for a two-year period. During this time, members will pay a cash rent for land. Basic infrastructural improvements will be carried out by members working through their cooperative with the promise that, in the third stage, INPROA will sell the subdivided plots to members of the cooperative. Beneficiaries will be selected by the cooperatives with guidance and advice of INPROA. Throughout the process, INPROA will provide farm credit and technical assistance services to the cooperatives and their members.

INPROA arrived at this policy through experimentation with the establishment of campesinos' individual parcels on two fundos (as large Chilean farms are usually called), Las Pataguas and Alto Melipilla, resettled in 1962; one collectively operated farm, Los Silos, also "reformed" in 1962; and a trial run of this gradual distribution method on San Dionisio and Alto Las Cruces, which began in 1963.

Las Pataguas: Experience with Rapid Land Turnover

Prior to reform, Las Pataguas was operated as a single unit in traditional fashion: workers took their orders from intermediate-level foremen who, in turn, were supervised by the farm's administrator. Reform saw Las Pataguas' 1,162 irrigated hectares subdivided into 76 small farms. Over 60 percent of those selected as colonists had worked on the fundo previous to its reform as workers or supervisors.

Units of three sizes were established: 12 colonists were settled on 2.5 acre plots called huertos; 59 were moved onto family-sized units or parcels averaging 42 acres; and five others colonized hijuelas, averaging from 86 to 212 acres. It was planned that labor of those who had gotten huertos would be used on the larger units. Huertos and parcels went largely to those who were farm laborers previously; hijueleros were largely former supervisory personnel whose "capacity and experience" were superior.

An effort was made to turn over a developed unit to colonists on Las Pataguas. The irrigation system had to be revamped to serve small parcels, roadways had to be cut through the fundo, and some houses built. These improvements added about 20 percent to the cost of reform and are to be paid off with land over a 20-year period with 5 percent interest. Amortization payments are subject to readjustment annually for inflation. The average parcel (land plus overhead capital) sells for about US$ 4,660.

The cooperative and technical help. All colonists, it was decided, would be members of a multi-purpose cooperative which would function as an intermediary for input purchase and selling of produce, would supply bookkeeping and technical help, and would act as a caretaker of the colony's overhead investments -- buildings and machinery.

The cooperative was beset with problems from its inception. Settlers were naturally skeptical of a cooperative in which they were told membership was compulsory. A number of colonists believed that there was no advantage to selling their produce through the cooperative, a belief that proved well founded in the initial years.

It proved difficult to hire a competent bookkeeper. Members feared they were being cheated by lax accounting procedures. When year-end accounting was made, members were surprised and disillusioned with the amounts that had been deducted for inputs and interest. Though evidence shows INPROA to have been scrupulously honest, it had not helped colonists to see the value of each expenditure as it was made.

Technical help from INPROA was to have been channeled through cooperative officers who would, in turn, help members. However, technical help was supplied irregularly -- often not when it could be most beneficial to colonists. When it was available, campesinos were not certain of its reliability. The new owners seemed to feel the risks of trying new practices too great a gamble and largely managed their parcels with techniques already known to them.

There was a hope that better-trained hijuela operators would be able to fill in as technical assistants to parcel holders. But from

the beginning, those most favored settlers who received larger plots began to dominate the cooperative, bringing dissension among the majority group, who resented this effort to control their organization. Even their demonstration of better techniques didn't seem to "trickle down" because of these social barriers.

Economic changes. Interviews of a random 25 percent sample of the beneficiaries of the parcel-holder group reveal that net cash income, mainly from the sale of crops, averaged about E° 2,457 in 1963-64. [At the time these calculations were made in 1964, 3.25 escudos = US$ 1 at the free rate.] Besides this, the average parcel holder paid INPROA about E° 1,000 for the use of land (understood to include infrastructural improvements) and machinery. This represented interest on outstanding land and capital debts. He also consumed products grown on his parcel valued at about E° 1,364. The joint income of all the factors of production on his parcel was thus about E° 4,821 in 1963-64. His return to labor alone, without subtracting any depreciation, was about E° 3,821. These same parcel-holders' incomes under the traditional system averaged E° 1,162. Comparison reveals an increase in labor income under the reform program of somewhat over three times. It indicates a more than satisfactory rate of return to labor compared to its possible employment elsewhere in the economy.

The purpose of the experiment at Las Pataguas, however, is to transfer land ownership and give colonists an equity in some machinery. Beginning in 1964-65, colonists will have to begin making principal payments averaging about E° 785 annually on their land. Principal payments on machinery purchased by the cooperative or parceleros individually at the beginning of the reform effort (which averaged E° 225) began in 1963-64.

An examination of the labor income figure would imply that parcel holders would have no trouble meeting these principal payments (E° 1,010 yearly). Nonetheless, an analysis of how households spend their income shows that, although labor income rose in 1963-64, so did family expenditures. Although the year before reform expenditures could not exceed the net income of E° 1,162, in 1963-64 they totalled almost three times as much or E° 3,317. When these amounts are subtracted from the return to labor established earlier, a savings of only E° 504 remains. Since E° 225 was due as a principal payment on machinery, a surplus of E° 279 remains. If land principal payments had also been required in 1963-64, the average colonist would have shown a deficit of E° 506.

Thus, in order to meet coming land payments, colonists will either have to lower consumption, raise production, or cut costs. The first alternative would be painful and its achievement most problematical. This indicates a more general situation with which

any future agrarian reforms will have to deal: the pressure for increased expenditures for family purposes among those who have long lived in dire poverty is strong.

Efficiency. Comparison of Las Pataguas' output per acre with yields on a neighboring farm under good management and having similar soil and water resources shows that, given good management, production on Las Pataguas could probably be raised enough to allow colonists to meet all operating expenses and land and capital payments if costs do not rise. This margin of unexploited productivity still exists even though Las Pataguas under reform is producing more gross income than it did under the traditional hacienda system.

Reallocation and stabilization of operating costs at their present level would also seem to be possible, even under a more intensive farming pattern. Left to their own devices, settlers on Las Pataguas seem to have been contracting for more hired labor than would be needed if family labor were fully utilized. At the same time, colonists have been using far less fertilizer per acre than the neighboring farm where productivity was higher. A greater percentage of operating expenses should probably have been allocated to yield-increasing inputs (such as fertilizer) and less to hiring labor.

Hiring labor, of course, is one way to spread beneficial effects of reform to a wider group of workers. The crux of the matter, however, is that the farming program should be intensified concurrently with hiring additional labor so that labor will be more productively employed.

If Las Pataguas colonists are to meet their land and interest payments, management talent which would assist colonists to reach an optimum allocation of resources will have to be greatly increased.

San Dionisio: Gradualistic Land Turnover

In contrast to the Las Pataguas system, a gradualistic method of land turnover is being used on San Dionisio. In this experiment, INPROA has retained management and family-expenditure control. Colonists will receive their individual parcels after this intermediate training period.

INPROA officials felt that Las Pataguas' system of establishing colonists immediately on parcels weakened its young cooperative by giving too much independence too quickly to farmers as yet unprepared for rational decision making. At San Dionisio, INPROA decided that putting several steps between settlement of a fundo and creation of private farms might foster cooperative ideas during the

intermediate period, helping to make the cooperative into an effective bargaining organization.

INPROA officials recognized their dilemma: they had to help colonists who were inexperienced in agricultural decision making without destroying their sense of participation in the colony.

Working through settler committees, the San Dionisio cooperative began, upon its formation, to make decisions on such nontechnical issues as choosing fellow colonists and employees (the bookkeeper, for example), electing officials, meting-out penalties to members who refused to do their share of the work, etc. Its general meetings came to constitute a forum which helped to crystallize colonists' desires for presentation to the INPROA staff.

Some problems, however, could not be immediately resolved by a majority vote of cooperative members: amount of fertilizer to use, when to apply insecticides, whether or not to use seed disinfectants, etc. These techniques were presented through the central management. Supervised credit could be withdrawn if advice were not followed. At the end of the 1963-64 crop year, on-the-farm courses in cooperatives, agricultural techniques, money management, etc., were added to the program to build up individual skills. In 1963-64, an INPROA technician worked part-time, and a resident technician was hired for 1964-65. This system was designed to teach colonists that new practices pay. Adoption, reasoned INPROA officials, would follow.

Although it is too early to tell whether the gradualistic transition to ownership adopted will be more successful than the rapid transition of campesinos from resident fundo laborers to family farmers on Las Pataguas, several comments can be tentatively made in comparison of the two systems now.

The intermediate stage. As mentioned previously, the first stage of the program was conversion of landless laborers into sharecroppers. In the 50-50 sharecropping (mediería) system on San Dionisio, INPROA supplied the land for which it, in turn, paid a cash rent to the Archbishop of Santiago. Most operating expenses were split 50-50 with the colonists, but labor was completely at the cooperators' expense. Gross income was split 50-50 between the colonists and INPROA.

Each colonist was asked how much land he felt he could care for under a sharecropping system at the beginning of the 1963-64 crop year. INPROA worked out the cropping pattern for the fundo. Each colonist was assigned parts of large fields which represented the best compromise between his acreage desires, crops he

wanted to grow, and the amount of cropping land actually available. Former fundo fields were not divided: a colonist may have had plots -- of which the total area approximately averaged that of a parcel on Las Pataguas -- in four or five large fields.

This system allowed INPROA to take advantage of any economies of size there might be in large fields while maintaining centralized management over such matters as fertilizer application, insecticide use, etc., as well as planning of the farm's cropping pattern. The foremost advantage of the system seems to be that it economizes on scarce technical resources, but other economies are that the irrigation system does not need to be divided and that crops can be seeded with a large drill and harvested with a self-propelled combine.

Each colonist had certain decisions to make on the portions of the fields which were "his": when to weed, how to divide irrigation chores, etc.

Economic changes. The average colonist on San Dionisio showed a net cash farm income of E° 2, 542. Besides this, he consumed E° 824 for products in kind indicating a total return to labor of E° 3, 366. Income of the same colonists the year before the reform (cash plus perquisites expressed in escudos of 1963-64) had been E° 1, 028, indicating again a more than satisfactory return to labor under the reform situation.

An analysis of family expenditures shows that E° 1, 270 of net cash income was spent off the farm. Together with the E° 824 of in-kind products consumed, this indicates a total family consumption of about E° 2, 094 or an increase for colonists on San Dionisio of about two times (rather than the increase of about three times on Las Pataguas). This implies a savings of about E° 1, 272. Although, under the system described, no land payments were to be made from this amount, an average of E° 181 was due for machinery purchased by the cooperative or individual members. This indicates a surplus of E° 1, 091, showing that most colonists could probably have met a land principal payment this year if eventual payments to be made are roughly similar to those on Las Pataguas. We can assume that the fundo is also capable of meeting necessary interest payments. In addition to interest, the part of the income accruing to INPROA pays the irrigation rights, land taxes, a few other expenses of the cooperative, and expenses of management.

Cooperation and consumption. Much emphasis on San Dionisio was placed on building the cooperative into an effective bargaining organization. There are pieces of evidence which indicate that this effort was far more successful on San Dionisio than on Las Pataguas.

The San Dionisio cooperative built a school, hired two teachers, and, since April 1964, has been offering a full day of classes to more than 100 colonists' children and those from neighboring farms. All six primary grades are taught. Besides, courses for reading and writing are offered to adults each night. In 1966, the government will probably begin paying teachers' salaries.

With the help of the cooperative, INPROA kept an accounting for each colonist. Living expenses and advances in kind for inputs were noted as they were loaned to each member during the year. All of the operating expenses, together with a prorated share of machinery the cooperative voted to purchase, were deducted from the harvest corresponding to each colonist.

At the year's end, each colonist was given a lump sum payment which represented his surplus from the 1963-64 crop year. It was found that colonists spend quickly upon the receipt of their money because they are aware of how fast inflation depreciates currency. (The consumers' price index increased 38.3 percent in 1964.) It does not follow that foolish expenditures are made. Most colonists we interviewed were aware of their capital needs -- as they were of their consumption necessities -- and made necessary purchases when they received their funds.

Between the date of the receipt of the cash and the time of our interview, about 41.5 percent of the average cash available was spent for farm operating expenses and capital. About 39 percent had been spent for family expenses. Only about 19.5 percent of the average cash available had been saved. Of several planned uses of the amount saved, the most frequently noted was for consumption purposes later.

It seems that this scheme was able to channel more funds into investment than on Las Pataguas. Gross production per hectare was, of course, higher, but, in the absence of several years perspective, it is difficult to say definitely whether this was due to a higher initial fertility of the fundo or better management.

Considering that colonists showed about enough surplus this year to make a land payment had one been required, we must conclude that, if everything else remains equal, the consumption level should not be allowed to drift higher unless net income can be raised.

Although it had not completed an "investment plan," INPROA had, through the year, arranged for speakers to address the cooperative from time to time on matters of money management, perhaps contributing to the frugal economic behavior detailed above.

INPROA also suggested that if each cooperative member would contribute E° 70, two necessary projects could be undertaken. A team of workers could be contracted to cut fence posts, and work on the fundo road could be begun, thus hastening parcelization. Apparently anxious for parcelization, the cooperative accepted this suggestion by a wide majority and work began. All cooperative members began contributing their labor each Saturday to work on the fundo road at the beginning of 1965. This was vastly different from the Las Pataguas scheme, where infrastructure building was accomplished with little community involvement.

* * *

Whether gradualistic turnover of land to campesinos might be one manner of combating lack of campesinos' entrepreneurial skill, whether it is better able to hold down the consumption expenditures of new landholders to permit them to channel more of their increased earnings to investment purposes, whether more agricultural surplus will be available for the market, and whether local institutions are strengthened thereby merit further study by reform administrators and students of land reform in Latin America. For the present, indications are that the San Dionisio system of gradualistic turnover is progressing far more successfully than the Las Pataguas plan. And after individual farms are assigned on San Dionisio, cooperative members should be better prepared than those on Las Pataguas to participate in the supervised, short-term credit program that will provide funds and inputs in-kind depending on colonists' conformity with a farm plan for their parcels.

[Since the research for this article was undertaken, from January 1965 to June 1966, the Chilean government carried out 44 land-reform projects of the San Dionisio type (asentamientos). These schemes affect 2,416 families and 332,000 hectares; 7-8,000 families are expected to be settled on asentamientos by the end of 1966.]


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